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## HANDBOOK OF ARCHITECTURE

Part II

## ARCHITECTURAL STYLES

Volume 5ITALIAN RENAISSANCE ARCHITECTURE

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RESEARCH IN ARCHITECTURE

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By Dr. Joseph R. ...

RESEARCH IN ARCHITECTURE

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## HANDBOOK OF ARCHITECTURE

## Part II

## ARCHITECTURAL STYLES

Division ~~III~~ 3.

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By Dr. Joseph Durn.

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## HANDBOOK OF ARCHITECTURE.

## Part II.

## ARCHITECTURAL STYLES.

## Division 8.

## RENAISSANCE ARCHITECTURE.

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## PREFACE.

The statements made hereafter are based on observations and studies extending back to the time, when in the winter of 1886, I first passed over the Alps for the purpose of an extended study tour. Whatever is described, I have myself seen, examined, and drawn. Only the smallest portion of the materials collected in the course of years could be utilized within the prescribed limits; and for the larger and well known monuments, I have for evident reasons been compelled to give preference to general views from photographs to those from original drawings.

This volume forms the natural conclusion to two previously published volumes of this Handbook (Part II:— Volume 1, Architecture of the Greeks; Volume 2, Architecture of the Etruscans and of the Romans), and they may all be regarded as a connected whole, for one book succeeds another.

If a greater importance be assigned to structural ideas in these works, many of these being somewhat thoroughly treated, it will not be forgotten, that the architect here primarily addresses architects, who will not fail on their part to produce higher and purer designs, without which every art forfeits its existence, by means of a proper emphasis on historical events and esthetic impulses.

Carlsruhe. Oct. 1902.

Dr. Joseph Durm.



## SECTION 2.

## RENAISSANCE ARCHITECTURE IN ITALY.

By Dr. Joseph Durm.

## A. INTRODUCTION.

## Chapter 1. General and Historical.

"Therefore have we always wandered just as far from good taste and beauty, as we have wandered from the Greeks; most widely in sculpture and architecture, the ancients never become antiquated. They are and remain the polar star for all undertakings, whether in literature or the formative arts, which we should never lose from view. Shame awaits the period, which presumes to set aside the ancients. Therefore if a depraved, miserable, and only materially directed "present time" anywhere abandons their school, to find itself more comfortable in its own darkness, it then sows shame and disgrace".

Schopenhauer. *Parerga and Paralipomena*. Vol. 2.

## 1. Survey.

Scarcely had been allayed the storms of the migrations of the nations, which raged throughout the Italian peninsula and threatened to sweep away antique culture, than with the ceasing of barbarities, the knowledge of its great past appeared among the still partially antique peoples; they honored it and loved to connect themselves with it again.<sup>1</sup>

*Note 1. Compare Burckhardt. Cultur der Renaissance. 4th ed. Vol. 1, p.197. Leipzig: 1885.*

The prelude to this mighty procedure was undertaken by learned men and poets (Petrarch, Mussato); the formative artists only succeeded these in the scene, though with more splendid results, when architects and sculptors readily yielded to the influence of the antique, while painters utilized it less, since almost all great paintings had disappeared.

Upper Italy<sup>6</sup> first adhered to the Romanesque style of Central Europe in its architectural works, while Venice rather cherished the Byzantine style, together with nearly all Lower Italy.





The earliest attempts to reproduce the architectural forms of ancient Rome were made in the eternal city itself and in Tuscany.

Already in the 3-aisled Basilica of S. M. in Trastevere (1140-98), the arch had to yield to the architrave for connecting the detached pillars; on the exterior of the cortices of S. Lorenzo-f-l-Mura (1216-27) and on Ss. Giovanni e Paolo, which was restored in the 12th century after being sacked by Robert Guiscard, the antique architrave again recovered its ancient rights (Figs. 1, 2).

The artist family of the Cosmati created works in the two charming cloister courts of the Lateran (Fig. 5) and of S. Paul, which are permeated by the ancient spirit and do not yield in design and beauty of detail to the creations of the ancients, yet their masters knew how to express their individuality in them. It is no slavish repetition of ancient harmonies, note by note. The works of the Cosmati do not equal those in size, massiveness, or force in construction, but in well-weighed proportions, in the spirited harmonizing of the ashlar with their costly colored ornamentation. No visitor of these little courts (Fig. 5) can repel the magic of their effect; smiling peace, and not the damp northern air of the cloister, rules in these cortices.

Florence, the Tuscan capital, enters more boldly, being called to the leadership during the later changes in affairs. It presents to us the Baptistery in the lower city, the quiet octagonal building with a distinguished effect (1150), with its white marble panels bordered by Verde di Prato, its portal columns, its polygonal piers connected by blind arches, and the graceful Corinthian pilasters on the walls. The subdivision of the internal walls, conceived in entirely antique form with flat recesses and detached columns, their gilded capitals with the antique entablature above them, (compare the arrangement in the Pantheon), above which the wall pilasters with their intercrossed double arches on small columns, and the continuous main cornice bearing the dome, ... these are works, which could not indeed have been better done



by any antique master (Fig. 4).

And on the heights beyond the Arno is the wonderful Church of S. Miniato (1207) with its original facade, built at the same date as the Baptistery.

#### 2. Protorenaissance and Gothic.

But the strongly Renaissance buildings of Tuscanylikewise frequently exhibit the finest antique or classic forms of details, and the architecture in the paintings of Giotto and his pupils show a purely antique treatment. The "Protorenaissance" demands admission through such undertakings, but it was still impeded by the new "Gothic" style, which arose in France in the 13 th century.

German masters brought the French style to Italy and it prevailed, not by the advantages of its decorative appearance, but rather "as the mightiest form of the vaulted structure with the least possible materials". (Compare under D; Ecclesiastical Buildings). So far as effective interiors are concerned, the Gothic of Italy eventually surpassed its inventors in church architecture; for no cathedral on the other side of the Alps can show such an interior as S. Petronio in Bologna, in spite of the fact, that it stands there but half finished and without colored decorations; but the secular architecture of this style in Italy lacks the charming and fanciful play of form on our Lower and North German buildings with their roof ornaments, bay windows, turrets, etc., the high roof that compels an effective outline of the structure, which likewise belongs to French Gothic, and which the Renaissance masters of this country (Germany) retained in their creations, lending them an additional and peculiar splendor. Defiant and fortress-like in appearance in the cities of Italy are the palaces of the nobility and of the elevated wealthy class of citizens; their facades are regular and symmetrical in arrangement, the windows resting on a belt extending across, cutting through the masonry at regular intervals, the ground story mostly unbroken or also animated by small windows, designed for the security of the inmates and for defence. The living apartments are no longer in the ground story, as in the





antique house; they are placed in the next story above it; the "piano nobile" (best story) changes its place; the stairways and access thereto require a correspondingly more imposing treatment. Battlements for defense crown the walls of the facade or rise above the but moderately projecting arched cornices.

We likewise frequently find the stories corbelled out in stone, derived from wooden construction, the facade walls resting on stone corbels or stone arches, to give a greater width of street, required by increased street traffic, in return for increased floor area in the upper stories.

The great art of the 13<sup>th</sup> and 14<sup>th</sup> centuries had spent its force in the 15<sup>th</sup> century, the Gothic ended; it had reached the limits of its system, and a return to simpler forms was the only means of reviving the art. Men returned to the antique orders.

The round arch again took the place of the pointed arch, and where it appears on a Gothic building, it is the first certain indication of the death of this style.

### 3. Transition style.

The Gothic style still existed voluntarily for a time beside the Renaissance in certain provinces, though worn-out and without the cheerful ornamental degeneration in Northern countries, as in France, Germany, and England. To this is frequently added the necessary completion of unfinished buildings in the old style, especially of churches. It was still (1514) desired to build the facade of S. Petronio in Bologna in the Gothic style, and even the great Renaissance master Baldassare Peruzzi supplied two designs for this.

Niccolo Pisano and Arnolfo already worked in the old or new styles as required, thereby contributing not a little to the uncertainty in the decisions of those controlling the buildings, and of the public. The Bolognese architect Ariguzzi complains of this about 1514; "People of all kinds, priests, monks, nuns, artisans, owners, schoolmasters, women, potters, spindle-makers, laborers, and even water-carriers, pretend to be architects and to give their opinions, -- but none of them



appears with a model or drawings!"

*Note 3. Compare Burckhardt. Geschichte der Renaissance in Italien. 2 d edit. p.24, 30. Stuttgart. 1878.*

The Early Renaissance is usually more tolerant than the perfected style: it still esteems the works of its predecessors; It rejects nothing, and thus a number of buildings arise, in which picturesque charm and a naive mixture of the old and the new contend together and produce charming results. Painting and sculpture already become therein a freer and grander joint effect, -- highest in the best period of the style, -- caused by a more imposing treatment of interiors in accordance with the law, that vaulted apartments could not be made sufficiently lofty and spacious, "for one of the noblest things in architecture is the height of the stories."

And even if Filarete (1460) said of Gothic; "accursed let him be, who invented this blunder, and I believe that only barbarous peoples could have brought it to Italy;" like many others of the first period, he was indeed so good-natured as to adopt the pointed arch in the architecture of his facades, and he gave to his discontent the best expression, worthy of an architect, only by clothing the structural forms, so distasteful to him, with the most charming details, which the Renaissance has created.

#### 4. Examples.

Among these creations of the transition style, I include among ecclesiastical buildings alone, the interior of S. Francesco in Rimini (1445), and that of S. Maria in Palermo (Figs. 3, 6), built anew in the 15 th century on the site of an old church. In the portico and in the interior are the flat arches frequently found in the monuments of the transition from Gothic to Renaissance, moulded in a peculiarly original manner and executed as peculiarly attached to the vertical surfaces. Certain portions of the Cathedrals in Como and in Sebenico are to be placed here; likewise the cloister court of S. Maria della Quercia near Viterbo, with the Gothic ground story and the round arcade on Ionic columns in the upper story (Fig. 7). Also Filarete's doors for S. Pietro in Rome (1445),





once gleaming with gold and enamel, should be mentioned here as famous products in the domain of the minor arts.

Among secular buildings should be cited parts of the Hospital Maggiore in Milan (Fig. 8), as well as the facade of the former Bank of the Medici there, both by Filarete (1457; Figs. 9, 10), then the Palace Bolognini, earlier Isolani, in Bologna (1454) with round-arched porticos, above these being pointed-arched windows and a cornice with consoles and shells; the Palace Marliani, unfortunately destroyed in 1783, published in the work mentioned below from an old copperplate, with pointed-arched windows between pilasters and other additions, which breathes all the grace and all the fancy of the Renaissance; further the Casa Trovatielli in Pisa (1450), the Palace Vitelleschi in Corneto with its two great Gothic windows with tracery and its antique detail forms on doors and windows, as well as on the cornice with consoles (Figs. 11, 12, 13, 14, 15); the court of the Palace del Commune in Ancona (1470) with pointed arcade and angle columns on the massive piers, with palm-leaf capitals on the pilasters, which in this treatment of detail recall Early Renaissance work, the archivolts of the pointed arches there also arranged in antique forms, --- the whole being a work of Francesco di Giorgio. Likewise the Loggia dei Lanzi of Orcagna (1380; Figs. 16 - 18), which again allows its rights to the round arch of great dimensions, might be designated as a precursor of the Renaissance movement, as well as the court of the Doge's Palace (1505), whose round and pointed arches occur above and beside each other, there being round arches in the ground story and pointed arches in the next story, above these again being round arches. Finally should be mentioned as a very interesting example, the Palace Rettorale in Ragusa (1435-65), begun by La Cava and finished by Orsini.

*Note 5. Müntz, E. La Renaissance en Italie. Paris. 1885.*

The buildings just mentioned may be regarded as important representatives of the transition style; it is self evident that these do not exhaust the series of examples. But they may suffice to thereby exhibit what the transition style could create.



## 5. The New Art.

After these preliminary steps, there was only required the impulse of a man of genius, of a great work by him, to create an enduring application of the innovation and to make it fashionable everywhere. This was furnished by Filippo Brunellesco by his design and construction of the dome of the Cathedral in Florence.

The effect of this work is most clearly characterized by the letter of the best man in that highly learned age, of the great Leon Battista Alberti to Filippo di Ser Brunellesco, which he prefixed to his Pamphlet on Painting, as a preface and a dedication to Brunellesco.

*Note 8. Compare the translation and the Italian original in Janitschek. Quellenchriften für Kunstgeschichte. p. 46-49. Vienna. 1877.*

"Admiration and sorrow are together aroused in me, that so many exquisite and illustrious arts and sciences, which according to the evidence of history and of the still visible works by the ancients, so highly endowed by nature and standing in such splendor, are so seldom employed at present, or are almost entirely lost. Painters, sculptors, architects, musicians, geometricians, orators, soothsayers, and like noble and wonderful geniuses are today very rarely found and are (then) but slightly praised. Then I thought, --- and many things confirmed me in that idea, that nature, the mistress of all things, had already grown old and worn-out, would only be as likely to bring forth great intellects as giants again, as she did in wonderful abundance in her (almost) youthful and more famous ages.

But then after a long banishment, in which Alberti had grown old, I had returned to our mother country, preeminent above all others, I found that in many, but especially in thee, O Filippo, and in our very intimate friend Donato, the sculptor, and in those(others), Nencio, Luca, and Masaccio, there lived a spirit capable of every famous act, and one not in any wise to be placed below any one of the ancients, nowever famous in these arts he may have been. But I now saw always, that it





was no less a matter of our diligence and our care, than a gift of nature and of the age, to deserve in any such matters the fame of aptitude. Hence I ~~avow~~ vow to you, that if it was less difficult for those ancients to attain a knowledge of those highest arts with the actual abundance from which to learn, and which they could imitate, and whose practice is so toilsome for us today, therefore must our fame be the greater if without teachers and without models, we originate arts and sciences, which had previously never been seen or heard of. Whoever might be so proud or so envious as to not praise the architect Pippo, when he sees his buildings here, so massive, towering, large enough to cover all the people of Tuscany in its shadow, and it was erected without the aid of any scaffolding; according to my opinion an art-work, that was perhaps as little known to the ancients, as its erection appears inconceivable at this time. Yet there will be another place to speak of the superiority and also of the abilities of our Donato and of others, so dear to me by their characters. But thou goest on so strongly as thou dost, devising things day by day, by which thy wonderworthy genius shall inherit eternal fame and name, and leisure falls to you, that thou mayest peruse this little work of mine on painting, which in the Tuscan dialect I dedicate to your name- - - etc."

He closes the letter with the discreet proposition:--

"Never was an author so learned, that learned friends were not of the greatest advantage to him", and he requests possible emendations.

In the first half of the 15<sup>th</sup> century, the great Brunellesco under Cosimo I replaces the Gothic pier by the Roman column (compare Chapel Pazzi, 1480); he makes Tuscany the centre of the Renaissance movement. He arouses the feeling for beautiful proportions of the stories and with Michelozzo introduces a regular gradation of rustication, of windows, and of string-courses, which progress the Sienese extended, especially in the treatment of the cornice and in its proportion to the whole; in the treatment of the capitals, they even excelled the Florentines.



## 6. Early and High Renaissance.

Thus the development of Renaissance architecture particularly depended upon the works of a few masters of the very highest rank. These are in the period of seeking, in the first period from 1420 to 1500 (Early Renaissance): Brunellesco, Michelozzo, and Alberti; in the second one from 1500 to 1540, the golden age of the Renaissance (High Renaissance), the period of harmony between principal and detail forms and of decoration kept within its limits, the great Bramante from Urbino and his pupils.

*Note 9. Also compare Burckhardt. Der Cicerone. p. 300 et seq. 7th ed. Leipzig. 1898.*

About the middle of the 16th century, Michelangelo Buonarroti, the greatest of the Florentines, equally great as painter, sculptor, and architect, assumed the leadership; subjectivism in the art reached with him its climax. The academic period followed with its chief representatives, Palladio, Vignola, Serlio, and the art of the 16th century ended with Domenico Fontana, an imitator of those mentioned.

## 7. Barocco.

The art of Michelangelo eventually obtained supremacy; Bernini and Borromini, the masters of the Barocco style just commencing, appear at its highest, succeeded in the 18th century by the two strongest architects of that age, Juvara (1685-1735) and Vanvitelli (1700 to 1773).

We may decide on Bernini as we like, his porticoes around the Place of S. Pietro in Rome (1617) will always remain a dignified creation of grandiose effect, and no one can entirely deny to the Fountain Trevi, executed from his designs by Nicolo Salvi, a certain grandeur in effect with proportionally good detail forms, even if the whole be somewhat theatrical in conception.

The broken and prominent pediments, varying in all directions, the twisted columns, the heavy reliefs and the stronger effect of shadows thereby produced, became the characteristics of the style, as well as the circumstance, that the expression of power and feeling is required from the decoration,





sought by repetition and compactness, but the eye was thereby dulled for all more delicate forms.

Yet with all this blame, the words of Burckhardt should not be forgotten: "Barocco architecture speaks the same language as the Renaissance, but a ruder dialect thereof." And also: - "That contempt for this style will likewise not be found among educated architects. They well understand how to distinguish intention from expression, and they heartily envy the artists of the Barocco the freedom, that they enjoyed and in which they sometimes became great."

## Chapter 2. Renaissance Masters.

### 8. Survey.

What is presented in this chapter is not the history of the movement and of the works of the different architects of the Renaissance, -- this may be read in Vasari and others, -- there will not be given a history of architecture arranged according to the masters, praising their works, but rather will all they have given to us be collected as a whole, so that museums and archives with their treasures may lose somewhat in importance; only the architectural ideas embodied in stone appear to us primarily fruitful and worthy of consideration. "Saxa loquuntur", -- the executed works speak.

We all know that the highest conception of the ideal was not always embodied, -- just as elsewhere, -- that so much was wrecked on the obstinacy of those controlling the buildings, that others were either not built or were stunted by envy, bad times, or precarious conditions, as well as that the most divine inspirations appeared only on paper to the light of the world, merely as a precious material to disappear in drawings or to sometime bear witness to what the divinely gifted soul of the artist desired, but might not execute.

So was it then as well as today; scarcely has an architect ever been permitted to show among the stone structures of the world how high might be the flight of his imagination and his power in the solution of a given great problem!

Their names should be given in a general way, with what



they have created and what is told of them, but without a comprehensive completeness.

#### 9. Duration of the Lives of the Masters.

If the versatility and creative power of the Renaissance artists, who with a good general education were almost invariably painters, sculptors, and architects, at the same time, many of them being also authors, mathematicians, and military engineers, must be termed great, the question may then be asked, what duration of life was granted to them by Providence. The reply produces the succeeding Table, in which we assume as well known, that none of those mentioned passed the last years of his life in the quiet enjoyment of a pension. As Bismarck said, they all died in harness, like a good horse. They did not inspire their employers with the former zeal; they matured and their works became esteemed during the long life of the art.

The briefest duration of life is shown Raphael and Giulio Romano with 37 and 48 years; the longest by Fra Giocondo, Sansovino, and Michelangelo, with 99, 91, and 89 years respectively. The average length of life of the Renaissance architects is between 69 and 70 years, an age usually attained by the artists of our time with unlimited activity in a specialty, with a much smaller scope of abilities, and when they stop their work at a reasonable time.

*Note 10. A complete register of the architects of the Renaissance in Italy was collected with great industry, and with the execution of their works, it is contained in the text-book and manual of Redtenbacher, R. Die Architekten der Italienische Renaissance; p.383-451. Frankfurt-a-M. 1886. To this is also added a chronological register (p.452-508), a register of persons (p.509-538), a register of things p.539-540), and lastly a register of places (p.541-568), these together compose the most important half of the contents of the work. With great zeal and industry have the materials been collected therein, that make possible a rapid orientation.*

*In this compass of 185 printed pages, the enumeration of the masters could not be made in this volume, and in mentioning*





*their works, only brief notice could be given to those, which made the fame of the masters. I refer the more willingly to the work of Redtenbacher, since it was once intended for the Handbook of Architecture.*

# TABLE OF RENAISSANCE MASTERS.

## a. Early Renaissance.

Filippo di Ser Brunellesco. 1379 - 1446.

Florence; Dome of Cathedral, Chapel Pazzi, S. Lorenzo, S. Spirito.

Michelozzo-Michelozzi. 1396 - 1472.

Florence; Palace Riccardi; Milan; Chapel near S. Eustorgio.

Leon Battista Alberti. 1404 - 1472.

Rimini; S. Francesco: Florence; Palace Rucellai.

Bernardo Rossellino. 1409 - 1464.

Florence; Badia: Pienza; Buildings.

Fra Giocondo. 1453 - 1519.

Verona; Loggia dei Consiglieri: Edition of Vitruvius; Letters of Pliny.

Tomaso Rodari. 1485.

Como; on Cathedral: Pavia; on Certosa.

Giuliano da San Gallo. 1445 - 1516

Prato; S. Maria delle Carceri: Florence; Palace Gondi, Fortico opposite Orphans' Asylum.

Antonio Averlino. (Filarete). 1410 - 1479.

Milan; Hospital Maggiore, Bank of Medici.

Giovanni Antonio Omedeo. 1447 - 1522.

Pavia; on Certosa: Bergamo; Chapel Colleoni.

Francesco di Giorgio. 1439 - 1502.

Ancona; Palace del Comune.

Baccio Pintelli. 1450 - 1492.

Urbino; Palace Ducal.

Ventura Vittoni. 1442 - 1522.

Pistoja; Madonna dell'Umiltà.

Antonio da San Gallo. 1455 - 1534.

Montepulciano; S. Biagio.

The Lombardi in Venice: Martino L. 1480; Pietro L. 1481-1489; Sante L. 1504 - 1516. By them are :--



Venice: School S. Marco, S. Zaccaria, S. Maria dei Miracoli, Palace Vendramin-Calergi, Palace Corner-spinelli: Padua: S. Giustina.

b. High Renaissance.

Donato d'Angelo (Bramante). 1444 - 1514.

Milan: S. Maria delle Grazie: Rome: S. Maria della Pace, S. Pietro, Palace Cancellaria.

Raphael Sanzio. 1483 - 1520.

Rome; Palace Vatican, S. Pietro, Chapel Chigi, Villa Madama: Florence; Palace Pandolfini.

Giulio Romano. 1498 - 1546.

Rome; Villa Madama, Palace Cicciaporti: Mantua; Palace del Te.

Girolamo Genga. 1476 - 1551.

Pesaro; Church and Palace Sinigaglia, Palace Bishop.

Baldassare Peruzzi. 1446 - 1523.

Rome; Palace Farnesina (?), Palace Linotta, Palace Pietro ed Angelo Massimi.

Sansovino, Jacopo. (Tatti). 148. - 1570.

Venice; Palace Corner, Palace Casa Grande, Palace Library, (Royal), Scala d'Oro, Palace Doge.

Antonio Giovane San Gallo. 1482 - 1546.

Rome; Palace Farnese (without entablature): Loretto; S. Casa.

Baccio d'Agnolo. 1460 - 1543.

Florence; Palace Badolini (Hotel du Nord), Palace Torregiani. ni. Giovanni Mar. Falconeeto. 1458 - 1534.

Padua; Palace Giustiniani, Gate S. Giovanni.

Giovanni Dosio. 1533.

Florence; Palace Larderel, Chapel Gaddi in S. M. Novella.

Michele San Micheli. 1484 - 1559.

Montefiascone; Cathedral: Verona: Palace Canossa, Palace Bevilacqua, Chapel Pellegrini: Gates in Verona, Zara, Sebenico.

Michel Angelo Buonaroti. 1475 - 1564.

Rome; S. Pietro, Capitol rebuilt: Florence; Sacristy and Library S. Lorenzo.

2/ c. Theorists. From 1540 to 1580.

Giacomo Barozzi Vignola. 1507 - 1573.

Rome; Villa ~~Hesper~~ Giulio: Araceli, Porticos near: Piacenza; Palace Farnese.





Pirro Ligorio. 1491 - 1580.

Rome; S. Maria sopra Minerva, Villa Pia, Palace Vatican, S. Pietro.

Giorgio Vasari. 1511 - 1574.

Pistoja; Dome G. Umlta: Florence; Palace Uffizi: Arezzo; Buildings.

Bartolommeo Ammanati. 1511 - 1592.

Florence; Court of Palace Pitti, Fountain of Neptune, Palace Pucci, Palace Vitale, etc.

Pellegrino Pellegrini Tibaldo. 1522 - 1592.

Bologna; Palace University, Court of Palace Arcevisco, Palace Magnani.

Fra Giovanni Montorsole. 1506 - 1563.

Genoa; Palace poria: Messina; Fountain, Marble.

Galeazzo Alessi. 1512 - 1572.

Milan; Palace Municipio: Genoa; S. Maria di Carignano, Palace Imperiali, Palace Brignole, Palace Spinola, Palace Pallavicini, etc.

Andrea Palladio. 1518 - 1580.

Vicenza; Basilica, Palace Porto, Villa Rotondo: Venice; C. Redentore.

d. Barocco.

Francesco Borromini. 1599 - 1667.

Rome; Palace Spada, Towers of S. Agnese, C. Sapienza, S. Andrea del Fratte, etc.

Carlo Maderno. 1556 - 1639.

Rome; Nave of S. Pietro, Palace Barberini, Palace Mattei.

Giovanni Bernini. 1598 - 1680.

Rome; Altar Canopy in S. Pietro, Palace S. Apostoli, Palace Barberini, Fountain in Piazza Navona, Colonnades of S. Pietro.

Domenico Fontana. 1546 - 1607.

Rome; Portal of Palace Cancellaria, Aqueduct Paolina, Obelisk on Place S. Pietro.

Giacomo della Porta. 1541 - 1604.

Frascati; Villa Aldobrandini: Genoa; S. Annunziata, Facade Luigi dei Francesci.

Filippo Juvara. 1685 - 1735.



Como; Dome of Cathedral: Turin; C. La Superga.

Luigi Vanvitelli. 1700 - 1773.

Near Naples; Palace Caserta.

Nicola Salvi. 1735.

Rome; Fountain of Trevi.

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### Chapter 3. Building Materials and Technical Methods.

"One first seeks to win from the style, first its earnestness, then its sportive gracefulness. Its proportions are preferably based on the material. The ordinary building stone expresses itself with peculiar strength; one finds a certain expression of richness imputed to marble, a definite one to bronze, another to wood, and again a different one to stucco."

Burckhardt.

#### 10. Preliminary Remarks.

In order to first decide upon the nature of the purely technical works of the Renaissance, independent of the formal part, we should not forget that we have to do with a derived and not with an early phase of the art, one which was already preceded by highly developed culture and art monuments 2000 years earlier in Europe. The Grecian, Etruscan, Roman, Early Christian-Byzantine, Romanesque, and Gothic, had already said their lesson before the Renaissance in Italy had commenced to stammer its first words. We must see and judge under what conditions our predecessors worked, and thereby measure and estimate the undertakings of the new art, examine what is novel, original and individual, or was transferred from the ancients, and whether new acquisitions or losses, or uncritical dependence upon the antique are to be recorded.

Only thus will praise or blame be justified; only thus may we also utilize the principles for our creations and form the basis for the further development of a style, that has now for 600 years dominated all the countries of the civilized world, and has not even spoken its last word, as the great monumental buildings of all the principal cities of Europe, America, and Australia now completely show. Good fortune has given to us in the countries of German speech a Gottfried Semper, Hasenauer, and many others, whose works in the Renaissance style





will extend long rays, warmth, and light, even if in the period from 1790 to 1830, we must believe, as Leon Battista Alberti once did, that Nature had grown old and wearied and could never produce a great architect again!

#### 11. Building Stones.

And now the first question is:- what building materials did the earlier architects employ? They used natural and artificial stones; granite, porphyry, marble of many and of a single color, ordinary limestone, volcanic stones (tufa and peperino), sandstone in ashlar and blocks, mighty monoliths and small spalls, clay bricks, both burned and unburnt, as well as glazed terra cotta.

There were used as mortars at different times; lime, asphalt, hydraulic mortar (of lime, sand and puzzolana), with iron and wooden cramps.

#### 12. Building Woods.

For beams, the frame-work of roofs, and for works of internal decoration, there were employed hard and soft woods, the different kinds of oak, beech, poplar, alder, elm, ash, cedar, juniper, cypress, pine, larch, fir, willow, linden, walnut, olive, etc., both on this side and beyond the Alps. Sycamore and chestnut occur earlier in Italy than in Germany.

#### 13. Metals and other Building Materials.

Of metals were used; in Northern and Southern Europe, lead, iron, copper, tin, bronze, gold, and silver. For internal and external decoration, the most diverse colors, and also for the former, fabrics, leather, ivory, mother-of-pearl, precious stones of all kinds, large white plate glass, small pieces of cast glass of all colors, as well as different kinds of enamels.

The Renaissance masters did not resort to other materials. They indeed made one or another kind of fine wood or stone serviceable for ornamental purposes; but they added none to the principal building materials. They dispensed with substitutes, with which our era abounds, thanks to progressive science.

The kinds of roof coverings transmitted were:-- reeds, wood,



straw and earth, stone slabs, burned tiles, clay slates, and metal (lead, copper, bronze).

The roof of stone slabs (Cathedral in Sebenico), the tile roof (Cathedral in Florence, Dome of the Umlta in Pistoja, and almost all palaces in Tuscany), remain in use during the Renaissance. The gray Rhenish slate roof did not find its way across the Alps; it extended scarcely to the foot of the Alps on this side (Germany): the Genoese roof of slate slabs has nothing in common with it.

Of the metals, only iron was to any great extent employed for structural purposes in the Renaissance, but rather as a helping or assisting material for wooden and stone structures; it never played an individual part in the sense of modern architectural construction.

The use of bronze for large constructions (roof trusses) was not foreign to antiquity, evidence of which may be deduced from the bronze trusses of the roof of the portico of the Pantheon in Rome, existing a few centuries ago. An ecclesiastical dignitary engaged in building and his pliant architect destroyed and transformed them, utilizing them for their building purposes. "Quod non fecerunt Barbari, fecerunt Barbarini", (Barbarini did what barbarians did not do), -- Pasquin, always ready to strike, said of this act.

No attempt was made to practice and further develop the system of construction, of the art and methods of the antique, so highly revered by them, and which certainly found more extended use during the imperial period (in basilicas and forums).

The Renaissance in Italy made use of all the building materials mentioned and of the modes of using them, excepting the latter, and this causes the reproach, that it has contributed nothing to extend the application of metals to building purposes and to metallic construction, as the intervening art periods were likewise unable to do.

Hence an impoverishment in the structural means of expression is thereby proved, in comparison with the ancients.

#### 14. Iron as a Structural Material.

The role of iron as an aiding material in large structures of wood may be here considered only on account of its relations; it continues in the same way during all ages and was





the same in the Renaissance. More important for us is its co-operation in the monumental covering of rooms of wide span and likewise in small vaulted buildings, in which strong external walls or corresponding buttresses could not be assured.

Antique art avoided everything in building, which might afford opportunity for, or require the consideration of its stability, therefore it arranged its plans in such wise, that the necessary abutments for the vaults disappeared in the length of the walls, and they first became visible in the buildings of the late period (*Minerva Medica* in Rome), though but timidly. They likewise avoided a direct resistance of the thrust of vaults by inserting wooden or iron ties, especially of visible ones (figs. 19, 20; concealed in Fig. 20).

Byzantine and Arabian architects on the contrary made no secret of them, as the iron ties show in S. Sophia at Constantinople and also Fig. 21 c, taken from an Arab mosque in Cairo, where the insertion of a complete wooden framework with continuous ties between the capital and impost is carried out. Complete details of this may be found in the work mentioned below.

*Note 11. Choisy, A. L'Art de Batir chez les Byzantins. p. 117, 122; pl. 25. Paris. 1883.*

They were followed by the masters of Romanesque and Gothic architecture, who even made the ties objects of a colored decoration, as shown by the Romanesque Church of Schwarzach in Baden,<sup>12</sup> the Church buildings of S. Giovanni e Paolo in Venice, the Church dei Ffati there, and S. Anastasia in Verona (Fig. 21, a, b) and by various others.

*Note 12. See Durm, J. Die Abteikirche in Schwarzach. Deutsche Bauz. p. 453. 1899.*

In large structures, so far as these may be mentioned generally, the middle ages used iron for ties, when the iron bar is assured against deflection by suspension on iron wires. This necessary evil does not exactly form a decoration; in the Venetian churches, they have a complex effect by their different heights at the imposts of the side and central aisles, disturb the effect of the interior and always remain in-



interrogations of the knowledge of the builders.

This precedent in the sole use of iron was likewise followed by the Renaissance masters in an untoughtful way. Scarcely one of the vaulted passages in the cloister courts, resting at one side on slender columns of stone, is built without the questionable addition of iron tie-rods, and they likewise appear in the great Portico of the Innocenti, in the courts of the palaces of Florence, Milan, Bologna, and Genoa, in the cloister courts of S. Lorenzo, of the Certosa near Florence, those near Pavia, Pisa, and Bologna, as also in the Churches of S. Siro in Genoa, of S. Maria Nuova in Cortona, S. Maria della Grazie in Pistoja, and in a hundred others, concerning which it is to be said, that the Early Renaissance sought to keep its churches free from this structural addition (for example, S. Lorenzo and S. Spirito in Florence).

For connecting iron rods to anchors, there were employed pins, eyes, and bolts, with clevis bolts for tightening the wedges afterwards in certain other connections (Fig. 21, d, e, f, g), just as in the preceding period, which as seldom used screws of iron. No progress is likewise to be mentioned here, and cabinet-making alone presents such, for it first brought wooden screws into use. With these should not be confounded the "wooden screws", which the ancients already employed in presses for oil, wine, and for fabrics (Compare Pompeii, Fullonica).<sup>13</sup>

*Note 13. In the Chamber Accounts of Louis XI (1478) are mentioned "fifteen screws and four mornes (?) of iron. A more general use of the screw is first recorded in the 16 th and 17 th centuries. -- In the "Inventory of Mazarin" (1653) is included a bed:-- "The wood of a complete bed with the screws to put it together." -- In the Bargello in Florence is a bell with the date 1384, that still has a clevis bolt for fastening the hook of the clapper: another with the date 1440, on the contrary, has iron screw bolts with nuts.*

Chapter 4. Masonry of Natural Stones; Scaffolding, and <sup>o</sup>Histing Machines.

15. Stone Masonry.





## 15. Stone Masonry..

"The organic law, that acts in masonry is fixed by an artistic realization of what structural needs and local conditions prescribe, by the appearance corresponding to the feeling for beauty. The force of gravity and the resistance of the material thereto are the chief and most prominent forces here effective; it is clear that these increase in activity, the more the load increases, thus from above downwards. The stepped reduction of the magnitude of the structural elements from below upwards, that everywhere appears in the artistic structures best executed in ashlar style, therefore corresponds both to the laws of beauty and those of dynamics. To this is adjoined another law, both structural and esthetic, that of the similarity of elements, which applies equally and similarly. Thus with a stepped use of dimensions in courses, each course must consist of similar elements, so far as possible. - - - But as being vertical, the wall is moreover subject to the general law of proportional development, in so far as it consists of three parts, the base, the body, and the crown (plinthus, truncus, corona). - - - In every style, whether called Egyptian, Grecian, Roman, Gothic, or otherwise, there applies the absolutely true rule, that substructure and crown for buildings in several stories must first base their proportions on the whole, as if the entire building were merely divided in three parts, consisting of: 1, the substructure, 2, the crown corresponding to it and to the whole, 3, the intervening portion supported by the former and terminated by the crown. But moreover, the harmony of the smaller units (stories and their subdivisions) is to be arranged with each other and with the main division into three parts." - - -

Semper, G. Der Styl. p. 368, 383,  
388. Munich. 1863.

## 16. Egyptians, Greeks, and Romans.

The Egyptians built their walls entirely solid and wholly of ashlar; that race built for eternity and rejected stone filled masonry with stone facing. The Greeks likewise gener-



generally followed the same principle, but went to work more economically, for they neglected the contact and careful working of the ashlar in the interior of the walls, producing in a certain sense a hollow construction, which attained a high degree of stability by proper bonding in courses, coupled with the most careful dressing of the beds and abutting surfaces, with the connection of the separate stones in height, width, and depth, by means of iron dowells set in lead, by Z or H-shaped, or dovetail cramps, together with the use of through nealers (diatonoi). These ashlar were set without mortar and with the most perfect jointing, and no people of the earth and no period has to this day excelled Grecian buildings in beauty and in goodness of execution. on the contrary, everything else is mere bungler's work! Etruscans and Romans frequently sought to keep step with their predecessors in this matter, and they sometimes succeeded.

Although by them likewise, and especially in the late period, the massive ashlar construction with extremely great dimensions of the stones was employed, (Baalbec, certain portions of the Amphitheatre<sup>s</sup> in Verona, Nimes, Arles, Pola, and Rome), the works of the Roman constructors of the imperial period yet mostly exhibit the greatest economy in the use of dressed ashlar, for they gave the preference from them to filled masonry composed of spalls and mortar, faced with brickwork, ashlar, or stone slabs (Emplecton, opus reticulatum, opus incertum), a construction already condemned by Vitruvius, when he called attention to cracks caused by unequal settlement of the different parts of the building, and to the possible fall of it after completion, which might occur, when the filling was got made in suitable proportion to the facing, and when thick filling with thin facing were both executed at the same time. (Compare in this respect the cracks in the walls of the Tombs of the Mamelukes and of the Caliphs near Cairo, and those in a large number of fortress walls of Italian cities, faced with brickwork.

#### 17. Middle Ages.

Thus the Italian and German middle ages built with small





stones in opposition to the French, with poor ashlar masonry on the exterior and small pieces of stone on the interior. "Depopulation, poverty, and destruction of the roads and waterways, loss of ancient architectural traditions and of the mechanic arts, led the early middle ages to the thin ashlar masonry with thick joints in lime mortar, which is also an important key to the understanding of mediaeval architecture, since it characterizes the periods."

Another common property in all ashlar masonry of the peoples mentioned is the principle of pyramidal diminution, employed to actually increase the stability of the walls, or even for purely optical reasons. Egyptians, Greeks, Romans, and the architects of the middle ages, made use thereof, and those of the Renaissance did not exclude it. But they surpassed the ancients in its gradation.

And one thing further, that already occurred early (for example, on the pedestal of Agrippa near the Propyleion in Athens, Fig. 22), which is pseudisodomic masonry (with courses of unequal height), and which was in Byzantium in the early middle ages a favorite motive for the decoration of ashlar masonry, and thence extended further from east to west (Venice, Messina, Florence, Pisa, Ferrara, Bergamo, Como, etc., where white, red, and dark green to black, courses alternate together, when the darker are, as a rule, the thinner courses), and which was likewise adopted by the Renaissance.

#### 18. Renaissance Ashlar Facing.

As the Italian middle ages built first and then decorated, the reverse of the French (compare many unfinished churches and public buildings, for example, the Badia and the facade of the Cathedral in Florence, before its completion, also Figs. 23, 24 a, b, c, h), so did the Renaissance likewise. Most Florentine and Sienese palaces and those in other places, as well as many churches appear externally as massive ashlar structures, while the mass of the wall is built of rough stones or bricks, and the ashlars merely form the facing or inserted work. Thus the Pitti and Strozzi Palaces in Florence, surprising by massive rustication of their sandstone ashlar,



and also the Cancellaria in Rome with its wall surfaces of travertine stone and inserted window enclosures in white marble!

The unfinished Palace Farnese in Piacenza, some buildings in Bologna and in Rome (Figs. 24 a, b, c, h) afford an instructive illustration, how in process of building, spaces were left for string courses and architraves and these were backed by brick courses, which were removed as required in setting the dressed stones; the space for the window enclosure was left, and the opening for light merely enclosed by a border. Elsewhere the bricks are set diagonally in the mass of the masonry (Figs. 24 a, c, h), or spaces are again left for setting the architectural members, as might be seen on the Badia near Fiesole, on the Cathedral in Florence, and on S. Croce, before they were faced with marble (Figs. 23, 24 a to h).

The nature of the execution in the different periods, but especially that of mediaeval buildings (in which each stone should be set in its true place) was usually at the cost of other esteemed, deserving or undeserving ways, since earlier and later, ~~then~~ <sup>as now</sup>, men built in various ways, good and bad, and there are especially not wanting from the earliest and the earlier times examples of the fall of new buildings, scarcely completed or still under construction. This view, <sup>14</sup> that Otte has expressed with further deductions and proofs, is true of the construction of all periods and in all lands; it is just as applicable to antique architecture, as to that of the middle ages, that of the Renaissance as that of the most recent period. Therefore we have to indicate neither progress nor decadence in execution, merely good and bad together, but nothing attaining the same height as the works of the Greeks

*Note 14. See Otte, H. Handb.d.Kunstarchaeol.d.Deutsch. Mittelalters. Leipzig. 1883. Vol. 1. p. 40 et seq.*

The morbid longing to see the conception also executed as soon as possible, that strongly prevailed during the Renaissance period, the pressure of the persons controlling the





permitted but few structures of the Renaissance to attain exceptional eminence. Compare in this respect the execution in the court of the Cancellaria in Rome with the inconceivable jointing and cementing in place of the marble archivolts for the colonnade on the ground level (Figs. 24 e, f).

Thus in the construction of the walls not much new is attempted in the matter of construction and in practical execution, -- nothing can be learned from the condition of the monuments concerning the use of iron in the interior of the walls (dowels, pins, cramps), -- but in the matter of form, attainments may be mentioned, especially in the treatment and gradation of the ashlar work.

#### 19. Dressing and Coursing of Ashlars.

The mode of dressing and of decorating the ashlars, their form, size, and jointing, were always subjects of special consideration, in which the boss and its border, with the mode of jointing, come into consideration.

Experiments in this are as old as the history of architecture; they were made independently of each other in all periods and in all countries, -- in Asia, Greece, Italy, France, and Germany, -- and yet they exhibit allied forms and methods. Already the Solomon of the Bible caused the ashlars of the walls of his capital, Jerusalem, to be made from great blocks of limestone, and the stones to be surrounded by a marginal draft .49 ft. wide, the boss being fine pointed and projecting slightly, -- one of the oldest examples of ashlars with a boss and drafted margins!

#### 20. Ashlars with Convex Bosses.

In the Rome of the Kings, on the Servian wall upon the Aventine, and on the Roman Forum, on the Dipylon Gate in Athens, on the walls of the Stoa of Hadrian in Athens, on the Etruscan walls near Fiesole, on the mediaeval castles in Badenweiler and Rötteln, on the Neckar Castle near Heidelberg (Schadeck), and on many other monuments (Figs. 25 a to o), -- everywhere is found the same things; the drafted margin and convex boss, the latter projecting sometimes more, sometimes less, up to .98 ft. at Schadeck on the Neckar.



## 21. Ashlars Plane with Surfaces dressed in special Ways.

Besides the ashlar with convex bosses and drafted margins, there occur in all periods and in all civilized states plane stones with and without drafted margins, and in Italy, France, and Germany, there are such with special chiseling on the face, all before the beginning of the Renaissance period.

*Note 15. Compare Part II, Vol. 1, Figs. 35, 45; Vol 2, Figs. 30, 97; of this Handbook.*

On the so-called Tomb of the Horatii and Curatii near Albano, also called the Tomb of Aruns (erected at about the date of the Birth of Christ) is indeed to be seen the oldest example of this ornamental chiseling, then later varieties on the buildings of the Carolingian period, on the Church of S. George in Baden, on the Cathedral in Mittellzell on the island of Reichenau, on the belfrey of Castle Röttler in Baden, on the Romanesque buildings of Aquitaine (Southern France), on the Castle of Limburg in the Palatinate, in the crypt of the Cathedral of Strasburg, and simpler dressing on the Cathedrals in Metz, Worms, Spire, etc., which are all dated with tolerable accuracy. These bits of art are pretty widely scattered in place and time, so that one cannot prove any connection, but merely a whim, which recurs whenever men no longer knew how to make anything sensible.

An art fully conscious of its high aims, like the Renaissance, could neither borrow nor learn from this. Among the examples in Fig. 25 a to c are to be seen a few sketches with cuts of less depth, which in a weak way ornament the bosses.

## 22. Ashlars with moulded Borders and sunken Joints; Template Bosses.

In Roman art indeed occur ashlar with moulded borders, and also those with sunken joints (Cecilia Metella in Rome) and with bosses dressed off to a fixed template, that the Renaissance gladly appreciated for its new creations, when it had abandoned the architectural system (rustica) of the Italian middle ages, of cutting ashlar with stones, high, low, and of any length.

*Note 16. Compare Part II, Vol. 2, Fig. 111, of this Handbook.*





*Note 17. A fine collection of ashlar forms in the Renaissance is given by Auer in Die Quaderbossirung der Italienischen Renaissance. Vienna. 1887.*

How refractory and uncouth such rustication may appear, when it extends through several stories of a facade and has bold and uniformly heavy bosses, is shown by the masonry of the Gothic Palace Ricciarelli in Volterra (Fig. 26).

#### 23. Ashlars with Diamond Panels.

Besides this borrowing of the treatment of ashlars from the antique and the middle ages, and in addition to the development of the suggestion thereby given, there likewise occur new forms in the so-called "ashlars with diamond panels". Sometimes square, sometimes oblong on the visible surface, their crystalline edges either appear quite flat or project strongly, either directly from the surface or surrounded by a moulding. Examples in Verona (Palace Bellini), Venice, Bologna (Palace Bevilacqua, Figs. 27, 28), Cremona (quite flat square facets), and Ferrara (Palace dei Diamanti). Convex, and concave facets, an independence and a violation of the principles of sound stone construction are found on the ashlar work near the water-gate under the Bridge of Sighs on the Palace Doge in Venice, and reeded cylindrical ashlars occur on the ashlar masonry of Palace Sapienza and of Palace Quirinal in Rome. (Fig. 29 r).

#### 24. End and Bed Joints.

The location of the end and bed joints for bosses and sunken joints was in antiquity sometimes in the middle of the borders (Temple of Vesta at Rome), and sometimes coincided with the angle of the sinking (Oscilia Metella in Rome), which arrangements were followed by the Renaissance masters, as this falls in the middle of the groove on Palace Strozzi in Florence, at the edge of the boss on Palace Guadagni, and the same may be seen on Palace Gondi. On the latter, a part of the end joint is also concealed by the overlapping of the boss (Fig. 29p)

#### 25. False Joints.

On the mediaeval masonry of Palace Vecchio in Florence, the joints likewise fall in the middle of the groove, and on Palace



Linotta in Rome, "false" bed joints are formed (false end joints were also common in antiquity), for two courses are there apparently cut in one block (Fig. 29 n).

## 26. Border Treatment.

The treatment of the border or edge cutting was done only for reasons of form; but the material and the mode of setting also had some influence.

In the 6<sup>th</sup> century (B.C.), it was customary among Greeks and Romans to dress the beds of the ashlar over their entire extent and to set them on each other in courses without mortar; in the 5<sup>th</sup> century (B.C.), men were satisfied to merely level off the edges, making the bearing surfaces sufficiently large to safely support the load (Fig. 29, a to d).

3/ The kind shown in Fig. 29 d was not employed by the Renaissance, but those shown in Fig. 29 a, b, c, were used, always with the help of fine mortar (perhaps only lime paste) to even off the roughnesses of the surfaces in contact, and to prevent the spalling of the edges, since the dressing of the bed and end surfaces of the ashlar as done by the ancients was much too minute and costly, and was not considered.

Insertion of strips of metal or pasteboard, as now used in the setting of ashlar, are not known to me. In Arab and mediaeval buildings, lead sheets in the bed joints were in use.

## 27. Method of Working.

We must mention another technical matter concerning the treatment of the edges, which will show that the Early Renaissance did not adhere to the antique, but to the mediaeval methods of working. The entire middle ages exhibits a peculiar treatment of the edges, both on this side and beyond the Alps, for moulded work, with which I likewise include columns and octagonal pillars. They are cut by themselves, while the adjoining surfaces show a different treatment. As examples thereof may serve the engaged columns on the exterior of the Cathedral of Spire, the moulded work on the exterior and interior of the Abbey Church in Schwarzach in Baden, the angle columns in Or. S. Michele, the piers in the cloister of S. Croce, the shafts and bases of the columns in S. Maria Novella in





Florence, together with many others (Figs. 30 a, b, c, d, f).

#### 28. Polished Borders and Surfaces.

But the moulded work on Palace Strozzi in Florence, the great pilasters on the exterior of S. Maria di Carignano in Genoa, as well as those in the base of the principal facade of S. Pietro, exhibit the same method, whereby the tool marks are polished off on the edges, and the pointed ashlar of Palace Giraud with many others exhibit the polished margins, with close joints, using the finest white mortar joints (Figs. 30 e, g, k, l, m, n, o).

Polished surfaces are shown by the columns and mouldings of the Early Renaissance in the interiors of the Church of S. Spirito and that of S. Lorenze, after antique and protorenaissance models, the later sandstone architecture of the Chapel of the Medeci and of Palace Uffizi in Florence, with close joints of scarcely  $1/16$  th inch thickness. But the most finely wrought visible surfaces of ashlar are already to be found on the Cathedral in Como (Fig. 31).

#### 29. Buildings in Several Stories.

To the many antique forms, the Renaissance only added the diamond ashlar as a novel mode of expression for animating the surfaces of ashlar, and with an uniform division of the facade, as on the palaces in Bologna and Ferrara, that have been mentioned, this does not appeal to my feeling as the happiest gift in the treasures of form of the new art, and especially not in comparison with another great innovation, the already mentioned gradation in expression of the ashlar in buildings of several stories, which must be characterized as an achievement indeed!

The antique sought to produce a gradation in expression in their buildings of several stories by decorating the lowest story with engaged Doric columns, the second with Ionic, the third with Corinthian, thus endeavoring to produce a transition from the massive through the elegant to the magnificent, which the Renaissance adopted without change. But the expenditure for producing this effect was a considerable and greater one, wherefore the Early period sought to secure it in a



simpler way in its palace buildings. A conscious, or probably an unconscious attempt in the latter way was made on the mediaeval Palace Bargello in Florence (Fig. 32), when they built in the lower story with plain ashlar in high courses, in the next with those of less height, and with small split stones in the uppermost, with a tolerable similarity of courses in the different stories, while the experiment was dropped in the neighboring Palace Vecchio (Fig. 33).

### 38 30. Graduated Rustication.

On Palace Pitti a first attempt was made in gradation, so far as the rusticated ashlar in the ground story are rather more massive, though more pleasing, for individual bosses project beyond the others, but with entire irregularity, while in the upper stories is found a greater similarity and less projection (Fig. 34). A definite and regularly recurring bond and a fixed ratio of length to height is not carried out in the ashlar of the ground story, but on the contrary, a regular alternation of joints is attempted in the piers between the windows of the upper stories. The stones are sometimes square on the visible surface (1 to 1); the ratio of height to length is sometimes as great as 1 to  $5 \frac{1}{2}$ , while in the antique period the normal ratio amounted to 1 to  $2 \frac{1}{2}$  in extreme cases. In the lower story is also the largest Renaissance ashlar in Tuscany with a length of nearly 29.52 ft!

The credit for first systematizing the innovation in a monumental and perfected way is due to the architect of Palace Riccardi, the old master Michelozzo. The bold rustication above the base is terminated in the principal story by the window sill course; above it extends plane dressed ashlar in courses with sunken joints, over these being plane coursed masonry (Fig. 35). The same system is employed in Giuliano San Gallo's Palace Gondi (Fig. 36), but with the difference, that in the ground story, ashlar of uniform cylindrical section are used instead of irregularly rusticated ones.

But in both there is as little uniformity in height of ashlar courses of a story, as in Palace Pitti and its mediaeval predecessors, and no attention is paid to a regular bonded





31  
40  
coursing, but there is attained what antique art could only do by the use of its richest means; fortress-like sturdiness in the lower story, over this being solid and stable elegance, ending with the entirely plane exterior and the easy magnificence of the crowning main cornice, -- all in the surfaces and without other architectural elements.

### 31. Dimensions of Stones.

The adherence to the dimensions of the stones, i.e., the ratio of height to length of the visible surface, is in the buildings mentioned, as well as in Palace Strozzi to be cited, in which the ashlar bosses are cut to the same pattern in all the stones, only moderate and by no means uniform. It varies from 1 to 1, 1 to 1 1/2, 1 to 2, 1 to 2 1/2, 1 to 3, 1 to 4, up to 1 to 5 1/2, a circumstance which lends to the whole more life and individuality, to which too little attention is devoted in so many modern imitations.

### 32. Masons' Marks; Projection of Bosses; Tools.

On the bosses of the stones in the ground story of Palace Piccardi are to be mentioned masons' marks on the rough bosses in the simple forms of a circle (o) and of a plus sign (+), which do not recur on any other palace (Fig. 30 h, i). The massiveness of the bosses on this masonry may be expressed by the statement, that they project 3.28 ft. on the terrace walls of Palace Pitti!

The tools for dressing these stones and for setting them are given in Figs. 37 and 38, from the descriptions and drawings of the master Niccolò Zabaglia in his work published in 1748, and from those of L. B. Alberti.

### 33. Hoisting Apparatus.

The workmanship is conservative, and the same tools were used then as in the preceding centuries. Machines had not yet encroached upon it.

The masses for the structure had to be moved, they must be quarried, transported to the site of the building, and be raised in case of buildings of several stories; scaffolding was necessary for raising and setting the stones and also for the workmen to stand upon. The Renaissance masters were confronted



with the problem, when they had to do with works belonging with the greatest of all times. Yet they could count upon arrangements tested for centuries, beyond which they never progressed.

The ancient peoples had to transport and set massive building stones; the obelisks in Egypt, granite monoliths sometimes over 105 ft. high; ashlar in walls with faces  $19.7 \times 3.6$  ft. (city walls in Jerusalem), lintels over doorways 29.5 ft. long, 9.84 ft. wide and 3.28 ft. deep (Royal Tomb in Mycenae); in the time of Pericles, marble beams and architraves over 19.7 ft. long had to be raised; the largest building stones in the world were desired for the temple terrace at Baalbec (Great Temple by Antoninus Pius, 133 - 161 A.D.) with 64 ft. length, 18.8 ft. in height and width, and which had moreover to be raised 23 ft.

It was especially the epoch of Constantine the Great, which pleased itself with the use of great monoliths, and Diocletian had previously brought from the East for his Baths immense granite columns 14.75 ft. in circumference. This "cubic scale" was even employed by the 3d and 4th centuries B.C. in their creations in sculpture! The Tomb of Theoderic in Ravenna required for its covering a single circular block of stone over 26 ft. in diameter, which was transported from Dalmatia and must have been raised on the external walls.

The Carlovingians, and also particularly the rulers in Italy in the Early Renaissance period were pleased to employ large stones as materials for their structures, evidence of which is given by the granite columns in the quarries on the mountain road and the ashlar with bosses on Palace Pitti in Florence, of nearly 29.5 ft. length, the 3.28 ft. projections of the bosses of the stones of the terrace of the palace mentioned. (The terrace masonry indeed belongs to the recent period).

We see Egyptians, Greeks, Syrians, Romans, Franks, and Italians pursuing the path of these endeavors, though in the most diverse periods. But these aims have no common starting or middle point.

The middle ages, both on this side and beyond the Alps, keeps itself free in somewhat limited fashion and for the





reasons already given from this system, especially in its later developments.

With the introduction of lime mortar on a great scale in architectural construction, the use of large stones set entirely without mortar for walls and vaults ended in many places, though not for pillars and ceiling beams, the thickness of the walls being increased.

The setting of the large blocks was done by the aid of simple lifting machines, described by Vitruvius.<sup>21</sup> The roller and the pulley, the windlass and the tread-wheel,<sup>22</sup> were already known to the ancients in the earliest times. Men and animals had to operate them, as shown by Egyptian and Assyrian representations in relief, an illustration of which is given in Fig. 39, which exhibits a stone colossus on a wooden sledge with rollers underneath, dragged by ropes in men's hands with the help of great levers.

*Note 21. See Book X, Chapter 2, et seq.*

*Note 22. See Part II, Vol. 2, Fig. 211, of this Handbook; also Merkel, C. Die Ingenieurtechnik in Altertum. p.24. 1899. Berlin.*

For raising smaller dressed stones, the ancients already employed the lewis and the tongs, tools which we still use. (Figs. 37, 38).

How the Renaissance masters shaped their rollers, pulleys, windlasses, etc., we are instructed by Master Zabaglia and Cavalier Fontana, from whose works we give illustrations in Fig. 40. They were likewise confronted by the same problem as the Egyptians formerly were, -- to raise and set up one of the largest obelisks. How they solved it is shown by Fontana's work thereon and the illustrations taken from it. (Figs. 41, 42).

Egyptians and Assyrians employed for this work the hands of thousands of slaves; the Renaissance substituted horses for them, solved the problem without accident, completed the work without a precedent, which with our advanced methods and the help of steam engines and electricity would be a problem for experts.



### 34. Scaffolding.

Still higher were the requirements on engineering, on gifts in the domain of mechanics, from the demand for heavier building stones on buildings of greater height, and by the construction of centering for vaulting the colossal domes of S. Maria d. Fiore in Florence and S. Pietro in Rome.<sup>28</sup> The particular endeavor in these two buildings and also in others of allied design (the very much smaller dome of S. Maria di. Sarignano in Genoa, according to the drawings of Alessi in the building records) was to avoid supporting the centering of the dome from the floor, but to do this from the cornice or the walls of the drum. The first attempt on a large scale was made by Filippo di Ser Brunellesco to his eternal fame, who was followed by the Renaissance and Genoese masters and others.

*Note 28. Compare Durm. J. Zwei Grossconstructionen der Renaissance Berlin. 1887.*

The problem of the dome of the Pantheon was treated with considerably greater ease, which rested on thick external walls of no great height, while the domes in Florence, Rome and Genoa, were to be erected on the drum for the admission of light.

How the construction of the tunnel vault over the central aisle of S. Peter's was executed is shown by Fig. 43, after the description by Fontana.

## Chapter 5. Brick Masonry.

### 35. Buildings of Brickwork.

To walls of natural stones are to be added those of bricks left visible, in which those works entirely executed in brickwork, even in their ornamental parts, are to be kept separate from those, which show only the external visible surfaces of brickwork as a durable mode of construction, between stone bases, belts, cornices, and the enclosures of doors and windows, and which do not have to serve as a basis for other ornamentation.

Walls of air-dried bricks were already known to Egyptian antiquity; bricks measuring  $10 \times 4 \frac{3}{4} \times 2 \frac{1}{2}$  inches were used





and Nile mud served for mortar. In spite of the rainless climate, the external surface was coated with a protecting stucco (Fragment of wall near the Great Sphinx not far from Cairo). The Assyrians set their air-dried bricks with bitumen and protected them from the effects of weathering by colored glazed tiles.

Walls of burned bricks were introduced into Italy and Greece at the same time during the 4<sup>th</sup> century B.C. Bright yellow and red bricks were burned in Rome and both kinds were frequently employed together, as shown by a tomb before Gate S. Sebastiano in Rome (usually called Temple of Deus Rediculus), where the base, the pilasters, the architrave, the main and pediment cornices, and the window enclosure are of the red material, the panels thereby enclosed exhibiting a lighter one. This polychromatic treatment and the prominence of the building thereby produced, doubtless permits the assumption of an intended monumental polychromy.

The execution of these tombs on the Via Appia is peculiar, for all ornamental parts of the building, like the bases and capitals of the pilasters or columns, egg-and-dart mouldings, string-courses, and the subdivisions of the architrave are made of normal bricks laid in courses, a method likewise shown by the external walls of the Amphitheatre Castrense in Rome. The ornamental work produces the impression that after setting, this was cut out of the normal bricks with a sharp chisel. On the contrary, Stiller believes, that these parts were each first modeled as a whole, then cut into pieces and burned, since cut bricks are not durable on the exterior.

*Note 24. See Part II, Vol. 2, Fig. 131, of this Handbook.*

*Note 25. See Zeit.f.Bild.Kunst. Vol. 18 (1878), p.114.*

I incline most to the first assumption. Other requirements can be placed on the good Roman bricks than on our modern products! Where the bricks of the surfaces of the walls abut against moulded members, they are likewise cut away and are as well preserved as others on the building. They are  $9 \frac{1}{2}$  to 10 or even  $11 \frac{3}{4}$  ins. long and have a thickness of only  $1 \frac{3}{16}$  ins. with mortar joints  $\frac{1}{8}$  to  $\frac{3}{16}$  in. thick. A tomb also on the Via Appia shows behind this finely jointed brick



masonry the characteristic concrete masonry of the imperial period.

### 26. Rough Brickwork.

The monuments mentioned should be regarded as structures of rough brick masonry, but in them the joints are not emphasized in any striking or peculiar manner, contrary to the northern mediaeval custom.

The middle ages employed in Italy, especially in Upper Italy, bricks left visible on the facades of its buildings, as shown by the churches in Pavia, Chiaravalle, Milan, Crema, Cremona, Caravaggio, Monza, Brescia, Bologna, etc. <sup>26</sup>, and these all have red brickwork with white joints.

On the Certosa in Pavia (see adjacent plate), the bricks are stained blood-red and the joints are painted white, indeed as required by the variation of the materials in form and color and by the careless mode of execution. Here the antique likewise again stands higher than the middle ages!

The dimensions of the bricks on the mediaeval Baptistery in Cremona are; lengths 9 to 9 7/8 ins., thickness 2 9/16 ins. with mortar joints 1/4 to 3/8 in. thick.

*Note 26. Compare Illustrations of such churches in Gruner, L. Terra Cotta Architecture of North Italy in 14 th and 15 th centuries. London. 1867.*

For a rather decorative treatment of the exterior, there occur beside bricks in this period still smaller brightly colored plastered surfaces (Chiaravalle, S. Gottardo in Milan), as well as net-work patterns, produced by the bond with the use of red and yellow bricks (S. Francesco in Pavia).

Translated into marble, we find this mode of decoration on the wall surfaces of the Palace Doge in Venice and on the higher portions of the Basilica in Vicenza, where reddish and white marble slabs are combined into a regularly recurring surface pattern, a system of ornamentation, that has indeed its justification in the great unbroken surfaces of the walls.

Scroll ornaments in the spandrels of the arches with red ornament on a green ground or conversely, with good decorative effect, are found on Palace Visconti in Pavia, and an alternation of differently colored bricks in the arches, green conso-





consoles, yellow and green belts with foliage, white egg-and-dart mouldings between red and green leaves, occur on the apses of the Certosa near Pavia (See adjacent plate).

49. While in ancient Rome, the ornamental portions were composed of thin normal bricks, larger and especially made moulded bricks were employed in Italy during the middle ages. The generally very richly developed and wide archivolts of pointed-arched windows with twisted rounds, ascending foliage, scrolls with little climbing figures, etc. (compare cathedral in Venice) required another method. The Renaissance masters adhered to this, as for example, B. Filarete with his charmingly ornamented archivolts on Hospital Maggiore in Milan (Fig. 8). In a particularly beautiful manner and in the style of the noblest Early Renaissance are the terra cottas on the entrance portal of the Church S. di Sperandio da Mantova (1478-80) in Bologna, and those on the small and charmingly designed Oratory dello Spirito Santo (1481-87) likewise in Bologna and remaining to us. (Fig. 426). Francesco Malaguzzi Valeri says of the former in his book mentioned below:--<sup>27.</sup> (See the original German edition for the Italian paragraph quoted).

*Note 27. L'Architettura di Bologna nel Rinascimento. p.78. Bologna. 1899.*

The method assumed by Hiller for the Renaissance capitals of tombs on the Via Appia appears to have been actually employed here, and this is certainly the case with the flat pieces.

The Renaissance did not attempt a surface decoration with stones of different colors and with definite bonding patterns, since it worked with such emphasized bonds just as little as did the antique..

In the sense of the patterned wall surfaces of Palace Doge in Venice with variously colored marble slabs, according to my knowledge an attempt was made only on Chapel Colleoni in Bergamo, -- which resulted badly enough. Black, white, and red marble slabs form cubes, that appear to project from the surface, a motive just as absurd for the covering of a wall, as for that of a floor.

The second species, where the bricks are only arranged as a



covering of the surfaces between belts, cornices, and windows, appertains to the great examples of Palace Piccardo-Manelli in Florence, Palace Farnese in Rome, as well as to the court facade of the Cancellaria there, and also to many of the Bolognese palaces, among many others. Buildings constructed of bricks from the street levels to the roof cornice are Casa Carracci and Palace Alberghati (begun 1520), both in Bologna.

Filarete in his essay (Book 9") prescribes the following dimensions for bricks:- 6 inches long, 3 inches wide and  $1 \frac{1}{2}$  inches thick, demanding a "denajo" for each one.

On S. Maria della Grazie in Milan, with a by no means regular bonding, the bricks measure 11 ins. long,  $4 \frac{5}{16}$  to  $4 \frac{3}{4}$  ins. wide, and  $2 \frac{3}{8}$  to  $2 \frac{3}{4}$  ins. thick, with mortar joints  $\frac{3}{4}$  in. thick (See Fig. 24 g, i).

No innovations, differing from what the antique and the middle ages did, are according to the foregoing to be found in this respect in the Renaissance. No attention was paid to the ornamental effect of any of the well known Northern bonds, (cross bond, block bond, etc.), or of the joints by a special treatment of the mortar lines, as was in use in Lower Germany, for instance.

### 37. Majolicas of the Robbias.

But if we omit the flat Assyrian and other oriental clay slabs, they created one new thing in the introduction of colored terra cotta (majolica) figure pieces in the decoration of facades, in which the Family of Robbia made itself immortal.

Little white glazed figures on a light blue ground and in medallion form were arranged in a regular way in the spandrels of arcades, as the children on the facade of the Foundling Asylum in Florence show in the most charming manner. Over the doors and windows of houses, palaces, and churches, we may see the form of the Madonna in similar colors or smaller representations of Biblical events, often enclosed by realistically sculptured and brightly colored festoons of fruits, violet and yellow fruits among green leaves, cupids' heads on a blue ground, garlands of fruits and flowers suspended between candelabra on friezes (S. Maria delle Carceri in Prato), shells arranged like tiles on the panels of vaults





(Portico of Chapel Pazzi in Florence, Villa Poggio at Cajano, Fig. 44). On sheltered localities, gilding was even added to enrich these colored majolicas, as on the sacred fountain in the sacristy of S. Maria Novella and on the small altar canopy in Ss. Apostoli in Florence, where in spite of cleaning with water and brushes, vestiges of gold have not entirely disappeared. Many works can be properly judged and understood only with this addition of gold.

But the most wonderful effect is due to figure compositions extending like friezes beneath the window sills, for which the highest fame is due to that executed on the Hospital del Ospo in Pistoja, the seven mercies with other small figures. It is truly monumental and is especially beautiful in composition in its limited use of colors. Coats of arms occur in form of medallions with the Ave Maria richly bordered with garlands of fruits. The plain facade in but two stories with its deep porticoes resting on slender columns, the small rectangular windows over the frieze, the strongly projecting roof cornice casting shadows, the dark color of the bricks, the light plastered surfaces of the upper story, all harmonize together to enhance the charm of color, and to create an ornamental work, yet not overloaded, a second to which cannot be seen in the monumental art of all ages in this domain and in this style. This single endeavor in the matter of the treatment of facades suffices to ensure honor and eternal fame to the new art (Fig. 45)!

### 38. Plastered Facades: Sgraffito.

A protecting coating of lime mortar for masonry of less valuable materials, on that of doubtful appearance, or that built of small pieces of different kinds of stone, was in use from ancient times until this one. What was required in all periods and places for judicious reasons, Renaissance art could not refuse; for it knew as little as the most modern period how to create a substitute for stucco or to supplant it. Means were frequently lacking in earlier, as in modern times, even in works otherwise conceived on a great scale, for the use of monumental materials on the exterior of a building.



But the masters of late mediaeval art and of the Early Renaissance knew how to make a virtue of necessity, when they made unsightly plastered surfaces the basis for an artistic system of decoration, that may be considered indestructible, since as long duration was assured to it as to the stucco itself.

This ornamentation was at first limited to the execution of decorative friezes, borders around window openings, to subdivision into ashlar courses, in whose place figure representations later occurred, or even the entire available surface of the walls was covered with ornaments, grotesques, medallions, and figure compositions. The delicate drawings extended like a tapestry between the structural parts of the facade and animated in a harmonious way the otherwise cold surfaces of the walls.

The system of ornamentation termed "scrape-painting" (*sgraffito*) by the Germans especially flourished in Florence, the native home of the Renaissance, and is a kind of cameo work, a dark drawing on a light ground, when a dark ground is first applied, usually black but sometimes of other colors (brown, green, blue, or red), followed by a white or yellow coating, to which the design is transferred while it is still wet, the outlines being scraped out with iron tools, with which it is then hatched. A fresco drawing by Vasari gave the earliest directions for it (1512-74). The French took it up again in 1770, but this did not continue long, till in the middle of the last century, Semper again introduced it in Germany. It indeed found spirited acceptance, but in our rapidly living era, soon became disused again.

*Note 29. For new directions for the execution of sgraffito, see Romberg's Zeit. f. Prakt. Bauk. 1875-6. Also see Part III, Vol. 2, Heft. 1 (Abth. 3; Absch. 1, Chap. 4, under a) of this Handbook.*

As magnificent evidence of this mode of decoration in Florence are to be mentioned the *sgraffitos* on Palace Guadagni, which in a simple manner exhibit its principles; friezes below the window sills, subdivision into ashlar courses of the wall piers between the window openings, medallions in the spandrels





of the arches; then the best preserved sgraffitos on Palace Terregiani, built by Baccio d'Agnolo, with a frieze below the second window sill course, figure compositions within rich borders on the wall piers, and finally most richly decorated on the House adorned with the arms of the Medici (No. 24) in Borgo degli Albizzi (Palace Montalvi), covering the wall surface from the roof cornice to the street pavement. Realistic garlands of fruits, entire figures of cupids in niches and frames of fanciful forms, and appropriate ornaments alternate with each other in the richest abundance (Fig. 46). Likewise in the neighboring Tuscan cities are found facades of houses ornamented by sgraffitos, and papal Rome also makes use of this method in an extended and thoroughly artistic way in the grand style, as shown by the sgraffitos on the street and court facades of the most diverse houses and palaces, thus a House in Vicolo Galabraga with beautifully executed frieze and window piers, then a building in Vicolo Sugarelli with a frieze above the subdivision into ashlar, and further one such in Via dei Coronari, and lastly the court facades of a building in the Street Scossa Cavelli, -- a complete semblance of architecture with columns and arches.

*Note 30. The examples are to be found in the great work with plates:-- Maccari, E. Roma Sgraffitte Iaroscure. Secolo XV, XVI. Pls. 8, 11, 13, 22, in which the accuracy of the names of streets can now no longer be verified.*

### 39. Chiaoscuro.

Another and softer mode of decoration, in which the pencil again obtains its rights instead of the iron point, is that in Chiaoscuro, from the tone of the painted figure and ornamental representations, in which the same decorative motives prevail as in sgraffito, only with the difference, that figure compositions predominate in it, as shown by the example from the House in the Via della Maschera d'Oro in Rome, a work of Maturino Fiorentino and Polidoro da Caravaggio (Fig. 47); a too rich figure frieze on the ground story, entire figures on the window piers of the first and second stories, and figure groups on the second story with cartouches and trophies above the windows, together with the greatest plainness of



of the facade. The artists have been satisfied with the simplest rectangular window architraves without mouldings, caps, or other accessories in relief, in order to make their system of ornamentation prominent, -- the only correct principle, according to which they could proceed with the chosen method of ornamentation.

As sgraffito was a drawing on the wet plaster ground, so is chiaroscuro a painting thereon with a single color in different shades.

#### 40. Fresco Decoration.

Men were not satisfied with chiaroscuro painting for the ornamentation of facades; this received an increased effect by the addition of different colors; men resorted to fresco painting on the exterior, but this was not long durable in the mild climate of Italy, and the enjoyment of this ornamentation was not generally of long duration.

At first the same ground principles as of surface decoration were followed, which were dominant in sgraffito and chiaroscuro; but a mistake was made, when men began to go further and to imitate and represent stone architecture. Attempts of this kind are still to be recognized in faded vestiges in Upper Italy, especially in and near Genoa, as well as in Bergamo, in faded painted fluted large pilasters or columns, extending through one or more stories, with gilded bases and capitals or imitation marble shafts, with cast shadows, that are all incorrect according to the position of the sun, the effect of semicircular niches with painted bronze figures therein, and the like, are and remain misconceptions. Painting can aid the effect; but there is no architecture, which cannot be executed in relief for lack of means.

In the sense of this aid, the Early Renaissance has produced appropriate and perfect works, as for example on the Palace del Consiglio, on the garden of Palace Bocca-Trezze, on houses and palaces of Place Belle Erbe in Verona, on buildings in Bergamo, Venice, Mantua, etc. In many other cases it was limited to the ornamental, or the effect of parts executed in relief were heightened by the application of color, when marble capitals were gilded, the sculptured arabesques of pilasters





were overlaid with gold, and the ground was painted blue or slate color, the grounds of friezes were also painted, etc. (Fig. 48).

In spite of this error, -- and in what art development or style may not these be pointed out, -- to the Renaissance is incontestably due the highest merit for the development and extension of the decoration of facades.

#### 41. Stucco Facades.

But this most inventive of all art periods did not stop with the monochrome or polychrome ornamentation of wall surfaces; it demanded an increased alternation of light and shade, especially with building materials of light color, by reliefs with the use of stucco. The High Renaissance especially makes use of this effective manner of ornamentation, of which Fig. 49 gives a fine example from Palace Spada in Rome. The Renaissance here again created its own means. The captivating magnificence of this mode of decoration likewise matured on this side of the Alps good fruits, as many facades of the 17th century in South German cities show (House Asam in Munich).

#### 42. Mosaic Decorations of Facades and Interiors.

The construction of colored ornamental facades in unchangeable materials led to the use of mosaics, made of small pieces of colored marble, terra cotta, composition, or glass. We find mosaic work already among the Romans on floors, walls, and ceilings, it attained a high degree of perfection with the Byzantines (Constantinople and Ravenna); like the Early Christian, mediaeval art in Italy made extensive use of them, the Cathedral in Orvieto being the finest example; earlier churches in Rome, Venice, and Florence furnish evidence of it (S. Maria Maggiore, S. Lorenzo f.l. Mura, in Rome, S. Miniato in Florence, S. Marco in Venice, etc.).

As an external decoration, mosaic plays no part in the Renaissance; as an internal ornamentation of the walls and ceiling, it shows itself in the Church of S. Pietro strong, free, sound, and occasionally better than in the best epoch of its climax in the Byzantine empire, where it suffers from the lack of freedom in the drawing, though unsurpassed in the



splendor of coloring and in harmony.

In the imitation of famous oil paintings with the smallest pieces, most delicately graduated in color, which gleam on the walls of S. Peter's, this art goes almost too far, but is not without precedent therein, as apparent in the famous antique mosaic of the Capitoline doves.

#### 43. Incrustations.

A last step in the monumental ornamentation of the surfaces of facades is sought by "incrustation" with many colored slabs of nobler material, behind which is concealed the massive and less costly building material. The Protorenaissance in Florence (S. Miniato, Badia, Baptistery) already brought it into use, relying on antique models. But only Venetian architects herein produced the best and most beautiful, as well as the most harmonious in the use of color, and in the choice of beautifully veined slabs of marble, which they knew how to skillfully combine, as shown by the North court facade and the sides of the Giants' Staircase in Palace Doge, the external view of the fore-court facade of School di S. Marco (1485), in Venice, with its peculiar perspective representations by marble inlays. This method of creating a costly exterior by inexpensive means, which produces a dignified and truly beautiful impression, and which has remained good for four centuries, is again a merit of the Italian Renaissance.

### Chapter 6. Wooden Architecture.

"Of a peculiar Italian external wooden architecture in the sense of the Northern wooden structures, there can be no assertion, although certain combinations of wood occur in Italy, mostly in connection with structures in which antique traditions may be recognized."

Semper. *Der Styl.* p. 347 et seq.

#### 44. Wooden Architecture.

The peasants' houses in Italian Tyrol on the slopes of the Alps mostly have an ornamental wooden framework only in the gable of the attic story, while the occupied stories beneath  
58 this are solidly constructed of stone, but contain in their framework and their galleries reminiscences of a preceding





antique-like wooden architecture: they show us the complete abandonment of the half-timbered construction in a very definitely expressed way. It is possible and probable that the stone substructure of the period, when more wood was available in the Alpine regions, was preceded by one with wooden framework built into masonry, but we can scarcely prove its existence during the last thousand years (starting points in Bergamo' see Fig. 127).

Together with wood, stone likewise offered itself as a building material for the inhabitants; in a certain sense, it appeared ready for use in the boulders and loose stones on the mountain slopes, so that already in earlier times, the mixed method of construction was employed here. But men were then compelled to protect by projecting wooden roofs the stone masonry, which was not always properly built, but offered great resistance to wind and weather, thereby obtaining galleries and sleeping places around the house, protected from rain and snow.

Where similar conditions were elsewhere created by nature, we see allied methods in building. In the Bocche di Cattaro and in all Montenegro, the treeless mountains afford scarcely anything but stone; trees and orchards are planted, and therefore the inhabitants resort to stone construction for their huts and only use the costly wood and straw as a covering material. Stone houses with roofs of wood and straw are therefore not a structural eccentricity. The ancient civilized land of Italy was never depopulated, but it was so much the more exposed to the storms of war and the invasions of barbarians, and it had its forests thinned, their proper renewal being prevented by the unquiet times, was already early compelled to economically use those still existing, whereby for this reason the development of a wooden architecture appeared impossible, such as is shown by the North with its abundant forests (Germany, France, England, Scandinavia, and Russia).

45. Peasants' Houses at Bologna in 14 th and 15 th Centuries.

If we resort to the archives for information, where the re-



reality does not exist, these at least afford drawings. Such from the Italian State archives (*Disegno dell'Archivio di Stato*) show us the appearance of the peasants' houses (*Casa colonica*) at Bologna during the 14<sup>th</sup> and 15<sup>th</sup> centuries. We then see in this earliest period of the Renaissance only stone buildings with wooden rafters and tile roofs, but without an artistically constructed framework on the exterior (Figs. 50, 51).<sup>31</sup> Compare in this respect the two peasants' houses of the earlier epoch in Figs. 52, 53, from S. Gimignano and Parreno.

*Note 31. Facsimile reproduction from Malaguzzi-Valeri. L'Architettura di Bologna nel Rinascimento. p. 149, Figs. 52, 53. Bologna. 1899.*

#### 46. Cornices with Wooden Rafters.

In mediaeval and Early Renaissance cities, cornices with consoles and battlements crowned the structures at top, and only when these disappeared, did the strongly projecting antique wooden roof with overhanging rafters assume its ancient rights. Only this portion of the wooden roof construction could become an object of artistic treatment, and the Italian Renaissance also limited itself to this, since it neither could nor desired to consider architecturally low half-timber work with wooden posts, girts, and purlins, together with a display of crossed straight and curved timbers between them, the spaces being filled by thin masonry. It is and remains a mode of construction, even if it certainly is graceful, which is yet so attractive, that it has led the most modern architects to transfer it to city and monumental house architecture.

6: 6 The termination of the facade walls by a wooden cornice resulting from the construction of the roof is shown by the Early Christian style, the Protorenaissance, and then the Transition style, the most charming example (Fig. 54) of which is given by the roof-framing of the so-called Bigallo in Florence (by Orcagna, 1380 ?), and finally extending into the Renaissance, is exhibited by the Palaces of the Pisans and Florentines. These splendid cornices projected as much as 6.56 ft., and their structural and artistic treatment is shown by a drawing of Sandro Botticelli (1437-1515), which is published





in the work mentioned below.

*Note 33. Müntz, E. La Renaissance en Italie et en France. p. 388. Paris. 1885.*

A purely wooden structure is executed in a beautiful and characteristic way, a hood over the entrance doorway of the Cathedral in Pisa, which shows in an entirely different way, how the good period of the Renaissance also applied good taste and a sense of beauty in this wood-work, which concerns sound construction and use of form. (Fig. 55). As further examples, how beautiful and characteristic forms were wrought with the same constructive skill, is cited the covered balcony opposite the portico of Mercato Nuovo in Florence, adorned by the arms of the Medeci, and further the charming wooden cornice supported by stone columns in the upper story of the cloisters of S. Lorenzo, S. Orce, and the Badia, among others in Florence (Figs. 56 to 58), and lastly the massive and well carved wooden cornices of Palace Uffizi, Palace Guadagni, and of many other monuments in Florence and Pisa (Fig. 59).

How the Renaissance in Italy acted in the design of wooden protecting roofs over the entrances in enclosing walls appears from a doorway executed in the vicinity of the Certosa near Florence, an example recalling in its arrangement the antique roof of Puteoli, the specifications for which have been preserved for us.

*Note 34. Compare Part II, Vol. 2, Fig. 180, of this Handbook.*

## Chapter 7. Vaults and Wooden Ceilings.

### 47. Vaults.

Horizontal plain ceilings of wooden or stone beams, produced by timbers intersecting at right angles, or the so-called coffered ceilings cut in stone slabs, of moderate or wide spans, vaulted ceilings over all possible forms of plan, with all possible heights and the most varied treatment, built of ashlar with or without mortar, of bricks, of concrete, or of a combination of the materials mentioned, massive ceilings of iron and tiles (Vitruvius), sham-vaulted ceilings of cypress laths coated with plaster (Vitruvius), were known to antiquity



and to the middle ages, although the latter did not produce any kind of novel structural vault, whose principle was not already known to the Romans and Byzantines, or had not actually been brought into use. From this is excepted only the late Gothic net vault, in which the ribs are fixed beneath the continuous surfaces of the vault, being frequently suspended from 8 to 12 inches beneath them (cathedral on the Reichenau in Mittelnell and in other places) <sup>35</sup> according to the nature of the execution.

*Note 35. Further on this under D, Chapter 31; also in historical and technical relations, the magnificent works of Choisy; L'Art de Batir chez les Romains and L'Art de Batir chez les Byzantines (Paris 1883), also by the same author, Histoire de l'Architecture, (Vols. 1, 2, Paris, 1889), with their peculiar and interesting drawings; -- lastly, Part II, Vol. 2, pp. 161 - 203, of this Handbook.*

The Renaissance took something from all these; but the best suggestions were derived from the creations of the Byzantine empire, the domes on pendentives, the most pregnant attainment of these greatest constructors of the antique world! It combined these domes with other forms of vaults into novel structures (S. Giustina in Padua, Fig. 60), raised the cylindrical drum above the pendentives with its admission of light and decoration by columns, and first placed upon it the stilted semicircular or pointed dome, that was crowned by a lantern, -- arrangements only employed on a small scale by the Byzantines, so far as may be learned from the remaining monuments (fig. 61, S. Andrea delle Valle in Rome).

#### 48. Compartment Vaults.

The compartment, umbrella, or melon-shaped vaults divided by moulded ribs (Chapel Pazzi in Fig. 62, Sacristy of S. Spirito, over an octagonal interior in Fig. 63, S. Maria delle Carcere in Prato, Sacristy of S. Lorenzo in Florence in Fig. 64) are likewise to be referred to Byzantine influences.

The vault and roof were one in the antique dome; whatever was assumed in the interior likewise controlled the exterior; nothing could be changed in the form once adopted, and therefore the vaults were for statical reasons partially invisible





externally, i.e., were partly concealed by vertical masonry. In accordance with these exceptions from the rule, the Proto-renaissance erected the Baptistery in Florence, and the masters in Upper Italy later followed the same principle, but went so much further, that they permitted the vault to disappear externally beneath a hip or conical roof. (Fig. 65; section through Baptistery in Florence). To this solution is opposed another, where the wall extends upwards and is resolved into an arcade, when small vaults corresponding to the openings of the arcade are set thereon above the visible external surface of the dome, a charmingly beautiful motive resulting therefrom. (Compare Plate opposite p. 48; the apsidal dome of the Certosa near Pavia).

#### 49. Double Domes.

The greatest achievement of the Renaissance in construction was based on the preliminary advance mentioned, -- the Baptistery, -- and was the first erection of a double dome, or one with two shells, in which the forms of the external and internal shells of the dome did not at first differ much in outline.

"--- Then make over this another dome, to protect the inner one from dampness, and because it appears so much more magnificent and of greater curvature in form," says Master Filippo in his directions for the building. A practical and an esthetic purpose, to protect the internal dome from moisture and to give a more imposing appearance to the exterior, gave the impulse to this kind of domical vaulting, -- together with the impossibility of erecting a solid dome with the given thickness of the substructure without stepping back the external walls. An arrangement as on the Pantheon by constructing a vault with less thickness than the supporting walls, and with a balanced stepping at the base of the external dome would certainly not have produced a happy appearance.

The idea is and remains novel and ingenious, but its practical execution must appear less original by reference to the preceding erection of the dome of the Baptistery, especially if one considers that there the apex loading is already provided by a lantern (Fig. 65). But the purpose remains antique, to



permit the dome itself to again appear as a form of roof.

The two shells of the dome are of unequal thickness, the external protecting dome being only  $1/3$  as thick as the internal dome over the interior, and they are connected together by eight angle ribs (Figs. 66, 67 a, b, d), whose edges appear externally visible, as well as by two intermediate ribs in each of the eight compartments of the cloister vault, by which the shells are better stiffened and become more stable. The ribs are spanned by 9 arches in height (Fig. 66), while the angle ribs are again connected together by a heavy wooden ring joined by iron bands at the connecting points, which indeed must oppose any deformation of the dome. A similar wooden ring was previously arranged on the Baptistery, except that it was there placed higher; the vaults are also there constructed of quarry stones and not of bricks, as on the dome of the Cathedral.

*Note 36. See Durm, J. Zwei Grossconstructionen der Italienischen Renaissance. Berlin. 1887.*

- 6 A further resistance to the stresses of the two domes is formed by the two massive galleries, the upper one of these being constructed of stone beams on which stone slabs are laid. Whether a special bonding was executed in the internal dome, over 6.56 ft. thick, is very hard to say, on account of the plaster coating on its external and internal surfaces; but wooden moulds for bricks are still preserved in the Cathedral, which show the various kinds and sizes, which were used in addition to the normal bricks, and it may accordingly be assumed properly, that ties were used at the returns (ribs), that fastened two abutting surfaces of the vaults together at the same time. It must then be said, that in the brick masonry are inserted many sandstone ashlar, especially in the projections and ribs.

In the great work mentioned below, <sup>37</sup> are given the "scheme of the Depressed Arches (i.e., of the stress arches of the angle ribs extending to the adjacent intermediate ribs) at the apex", and the "scheme of the Stepped Bonding", and it is said in explanation thereof, that the two illustrations, one of which is reproduced in Fig. 67 b, show the scheme of construc-





construction of the depressed arches and of the vault surfaces of the external and internal domes. To this should further be added the bed joints of the vault radiate from the centre of the corresponding arc; but the separate courses of masonry are not horizontal, but are coursed in a stepped bonding, or as otherwise said, in zigzag or herring-bone bond (*Opus spicatum*), or as Fontana expressed himself in the description of the vaulting of S. Peter's, they are set in herring-bone bond. For this purpose, two shapes of bricks are employed, by the latter of these being indeed meant, that given by Brunellesco in his directions for the building, a view that does not exactly need to be adopted. I understand by this bricks of hooked form, for which the model still exists. Otherwise, what is developed in the work mentioned, I fail to understand, and in view of the fact, that the two domical shells are still intact, plastered, painted, and roofed by tiles, I may contest the possibility of coming to a final decision on the position of the bricks in general.

*Note 87. Stegmann, C. von. Die Architektur der Renaissance in Toscana, etc. p.44, Figs. 7, 8. Munich. 1896.*

Instead of this very doubtful statement, according to which herring-bone masonry alternates with horizontal in an inharmonious way and where stone headers are inserted between both, Choisy presents in his *Histoire of Architecture*<sup>88</sup> another view, when he declares:-- the dome is relatively light; by the manner of connecting the two shells, almost the strength of a solid one is secured; its material is concentrated where effective, the selected form favors in an increased way the erection without centering. There may be noted an unusual coursing of the voussoirs, which facilitates the erection without centering, for the usually tapered form of horizontal voussoirs are mingled with those arranged in spiral form (fig. 67 a, d), which penetrate the two shells and the ribs. How Choisy believes the work to have been executed is shown by the illustrations given from his work. Herring-bone work and spiral coursing of voussoirs will be recognized and established here!

*Note 88. Choisy. Histoire de l'Architecture. Vol. 2. pp. 616-617.*



The specification of Brunellesco for the erection of the Cathedral dome has experienced some editorial emendations in recent years, but these afford no changed points of view of value to us in technical respects. They follow here. The emended places are underlined. (In the original).

"1. First of all the inner dome is so shaped on the inside, that the angles are turned in the proportion of a sharp fifth. It is  $8 \frac{3}{4}$  braccias thick at the springing and continues in the form of a pyramid to the eye above, where it measures  $2 \frac{1}{2}$  braccias in thickness.

2. Another dome is built above and outside this to protect it from water, more grandly and splendidly curved,  $1 \frac{1}{2}$  braccias thick at the base; it continues in the form of a pyramid as far as the eye above, where it is to be  $\frac{2}{3}$  braccia thick.

3. The space between one dome and the other is 2 braccias at the base, and in this space are to be the stairs for ascending between the domes. this space is to be  $2 \frac{1}{8}$  braccias at the eye above.

4. Make 24 ribs, 8 at the angles and 16 on the sides; each angle rib is 7 braccias on the outside; on each side are 2 ribs, each measuring 4 braccias at the base, which join together the two domes and are built in the form of a pyramid up to the eye, their dimensions being equal.

5. The 24 ribs with the domes are girdled by 6 rings of large and heavy stones, well cramped with iron, above the stones are iron chains, which encircle the domes with their ribs. The base is at the springing  $5 \frac{1}{4}$  braccias, changes, and then follows the ribs.

6. The first and second rings are 2 braccias high; but the first ring is further strengthened below by long stones as headers, so that both domes rest upon these stones.

7. At the height of every 12 braccias between the domes are small tunnel vaults between the ribs, forming a passage to the domes, and below the small arches between the ribs are large oaken tie-beams, fastened to the ribs by iron cramps.

8. The ribs are built of stone with heavy stone supports, indeed the exteriors of the domes contain strong stones, that are fastened to the ribs up to the height of 24 braccias, and





then above, they will be built of soft or spongy stone, of course taking into consideration the purpose for which it is to be used, but of a lighter material than hard stone.

9'. A passage might be made outside above the 8 round windows with a pierced parapet 2 braccias high; or indeed, two passages, one above the other above a well ornamented cornice, the upper passage being left plain.

10. The water from the dome falls into a marble gutter  $1\frac{1}{8}$  braccia wide, and it may then run into certain spouts of strong stone set beneath the gutter.

11. There may be made 8 marble heads on the angles on the exterior surface of the dome, as large as may be required and one braccia high above the dome, with caps, and measuring 2 braccias high, and one braccia from the top to the gutter of every part, being built in the form of a pyramid from base to top.

12. Build the domes in the manner described above with no other covering and with the maximum size of 20 braccias; but with internal connecting bridges in whatever way will be advised and thought best by the masters, who are to build them; it may then be made over 30 braccias if desired, as experience in building will show what is the best plan to follow."

Cracks have likewise appeared here in the surfaces of the dome with time, from which it is attempted to prove the fact of different earthquakes in Florence.

#### 50. Dome of S. Peter's in Rome.

Peculiarities here appear in the conception, and especially in the details of construction, which moreover did not spring at a bound from the brain of Brunellesco in complete form, as the execution in comparison with the specification shows, and exist without precedent, so that we behold in the second great structure, the dome of S. Peter's at Rome, only an advance in the form, but not in technical respects, in spite of its appearance more than a century later.

The dome rises above an octagonal substructure with unequal sides, by which arrangement a portion of the pendentives are still supported by ascending masonry; the latter extends between four mighty piers, which are connected by round arches,



72 and already prepare for the reception of the circular drum, on which rests the likewise circular dome (Fig. 58). The arches are there entirely open and are not filled with arcades and walls on two sides, as in S. Sophia; the pendentives form true spherical triangles. As in the Church of S. Sophia in Constantinople, the dome is divided into supporting ribs and compartments extending between them, in accordance with true Roman principles; but according to the precedent in Florence, it is built with two shells.

Originally designed of true hemispherical form internally, this shape was abandoned in the execution, and for structural reasons, it was made of pointed arched form like the exterior, the two shells showing courses not extending parallel to each other, for the outer one is made steeper than the other. The statical reasons for the form of the dome were by the arrangement of the lantern and the loading of the apex the same as in Florence. In the large wooden model by Michelangelo, the different vaults are given above each other; the innermost was suppressed in the execution (See Fig. 69 and the detailed statement concerning the history and mode of execution in the author's essay, mentioned in Note 31, p. 65).

The supporting ribs extend through both shells and project from them both externally and internally; they assume the load of the masonry of the dome extending between them (Fig. 67 e), executed in herring-bone style. Michelangelo even provided in his model both iron anchors in the drum and also strong iron rings in the dome itself.<sup>40</sup> The rings were increased at a later time, since the original ones were torn apart, so that now 5 iron bands may be counted in all, which were applied in 1743, 1744, and 1748. The external surface of the protecting dome is covered with lead; precious mosaics adorn the internal surface of the inner dome. Both domes are built as one from the springing to one-third their height, and they there separate into an external thinner and an internal thicker shell.

*Note 40. Compare the Author's Essay already mentioned, (Plate 4), where the cracks after the execution are also indicated.*





73. 51. S. Maria di Garignano in Genoa.

This work of the great Florentine has been imitated on a smaller scale in the Church of S. Maria di Garignano in Genoa by Gian Galeazzo Alessi from Perugia, where the hemispherical internal shell was retained, while the protecting dome was somewhat stilted. Both domes begin to separate at the springing and each is separately built of brickwork; they support over a large opening at the apex a correspondingly large lantern.

The mode of their execution is different. The internal one is a Roman dome with coffers, while the external one is built entirely without ribs and without connection with the former, unless one regards as stiffening the two shells, the vaulted doubled helical staircase, that ascends between the two shells to the lantern and then descends to the main internal cornice. (Compare Fig. 70 and the larger publication of the construction of this dome in the journal mentioned below)<sup>41</sup> Connecting arches for resisting stresses are irregularly arranged in the space between the two domes here and there; but nothing is to be seen of any bonding with iron. There is to be mentioned as having only an injurious effect, a great crack extending from the apex to one of the supporting piers. The external protecting dome is covered by semicircular slate slabs, the internal dome with coffers being plastered and whitewashed.

<sup>41</sup> Note 41. *Zeit. f. Bauw.* 1902. p. 162 to 172, pls. 5, 6.

52. S. Maria dell'Umiltà in Pistoja.

A further example of a great cathedral dome like that of Florence is that of S. Maria dell'Umiltà in Pistoja, begun by Vittorio Vittoni and completed by Vasari. The hemispherical form is here employed on the exterior and the interior; the ribs reappear at the eight angles; also horizontal accessories occur in a somewhat stilted form, the apex leasing of the brick vaulting by a lantern is to be seen; the eight external ribs are composed of moulded ashlar, and the surfaces of the vaulting are covered by flat red tiles, just as in Florence.

<sup>42</sup> But misfortune controlled this building, which the first architect had to leave without a vault, and which Vasari,



"For the honor of God and for his own fame", actually supplied with the dome. The stone lantern is beautiful without question, very finely conceived in size and form, but is too heavy an apex loading for the form of the vault chosen, which exerted itself later in an injurious way, so that the city architect Laffri of Pistoja desired to have it taken down. But they were satisfied by surrounding it with iron bands, that are visibly arranged on the external surface of the dome in five series above each other, and with the exception of some cracks, it still stands today after the lapse of nearly 400 years, dominating the sky-line of the city. (Compare Fig. 71, and the Author's Essay mentioned in Note 41).

From this occurrence, men have desired to declare that the Renaissance masters were bad constructors. Then are the architects in other styles such likewise; for I know of no great or even smaller vaulted construction in architecture, uninjured by such defects. The mediæval cathedrals in Italy, and those in Germany, from Basil to the lower Rhine, are not free from them. The reasons for their appearance may be determined but not always avoided, especially when one considers, that the vaults partly rest on masonry in mortar, and partly on monoliths or ashlar courses with few joints. De Saulcy quotes in his book an Arab proverb; "the arch never sleeps."

### 53. Development of the Pendentive.

Very peculiar are again the various ways of shaping and decorating the pendentive and the adjacent arches under such domical vaults, that rest on a drum or are set directly on the pendentives.

25  
26  
27 The motive of S. Peter's, changed to a small scale in a very charming manner, is found in Chapel Chigi in S. Maria del Popolo in Rome (Fig. 72), and in the same church is the simplest solution, where the spherical triangle is covered by slabs of colored marble (Fig. 73); another simple one is in the Chapel of P. Clemens in the Lateran, where stucco figures fill the pendentive (Fig. 74), and again two others, splendidly adapted to the conditions, in S. Maria Maggiore in Rome, with hermes figures supporting medallions, or with leonine figures, that stand on the impost cornice before the





springing of the pendentive (Figs. 75, 76). And again a further solution is given in S. Maria del Popolo, where the dome over the intersection is octagonal in plan, and the pendentives are formed by corbelling and end horizontally at top (Fig. 77). Nowhere is this rich art embarrassed, and the novel and peculiar only so far appears, and where the structural idea is sound, there may the decoration be said to be equally so!

#### 54. Cross Vaults.

In employing the cross vault, the Renaissance mostly takes up Roman vaults without ribs, especially preferring those in which the groins entirely disappear at the crown. With very few exceptions, it decidedly avoids the vault with projecting moulded ribs, keystones, and heavy bosses in the compartments, in order to execute their decoration with the greatest freedom possible.

Where the Renaissance employed the cross vault with ribs, its decoration was carried out in the same manner as in Gothic. Ornamental bands accompany its ribs, the triangular pendentives received medallions with figures, and the angles grotesque ornaments.

On cross vaults without ribs, stucco and painting occur as means of decoration, or they are combined. Sharming works of this kind, -- with stucco and painting in the antique sense, -- are found in one of the side chapels of S. Maria sopra Minerva, as well as in the loggia of Palace Doria in Genoa, and as the finest examples of free ornamentation may be taken the ceilings in the form of cross vaults in Villa Madama near Rome, by Giovanni da Udine.

#### 55. Cylindrical Vaults.

Cylindrical vaults in the antique manner and subdivided in all the forms peculiar to that period, with coffers or divided by beams, then covered with stucco and painting (Scala d' Oro in Palace Doge, portico of S. Peter's in Rome, etc.), mostly with the addition of rich gilding. One of the most attractive decorations of this kind is executed on the cylindrical vault of the corridor joining the Sacristy and the Church S. Spirito in Florence (Fig. 78).

But the cylindrical vault with intersecting compartments



is that form of vault, which the Renaissance employed with especial preference. These compartments are sometimes arranged to make possible the introduction of light, at others to concentrate the thrust of the vault at certain points (S. Stefano in Venice, Fig. 79).

#### 56. Oblong Cloister Vaults and Vaults with Horizontal Panels.

But the Renaissance chiefly used vaults with horizontal panels above them and with or without intersecting compartments, at large and small scales, in corridors (compare the loggias of the Vatican), vestibules (compare Genoese palaces), living apartments, halls, stairways, sacristies, refectories, etc., as the favorite motive of their forms of ceilings. The style here brings all its decorative expedients into free development, here were offered to the decorating master curved surfaces of vaults, slightly curved large ceiling panels, and vertical wall spaces, which he could cover with great compositions, medallions and grotesque ornaments; he could work there with stucco and color, giving rein to his very rich imagination. No other style in the world can exhibit greater magnificence and freer disposition of ornamentation, than the Renaissance has appealed just here upon the peculiar basis created by itself.

The purely structural forms themselves have a graceful effect in the variety of their shapes and their intersections, and they were elevated to productions of the greatest splendor by the help of painting and small sculptures (Compare hall in Villa Farnesina in Rome, hall in Palace Doria at Genoa, ceiling of the Sistine Chapel, and above all, the precious Library in the Cathedral at Siena).

These forms of vaults could even be employed with a moderate extent of the height of the apartments; they rise as if soaring over them; a definite height of the springing lines was not fixed, and the section of the vault could be made with any possible curvature.

These vaults were mostly constructed of tiles laid flatwise and depended on good mortar, good tiles, and the skill of the workmen. Therefore, the cells in the Monastery of S. Marco





in Florence are covered by cylindrical vaults of oval section, that for a span of 11.8 ft. have a uniform thickness of the vault of only  $2 \frac{3}{8}$  ins.

For greater spans, solid construction was mostly abandoned; then recourse was had to the expedient of sham vaults of wood, already mentioned by Vitruvius, the vaults being constructed of timber arches and these being furnished with a covering of boards or laths and a coat of plastering on reeds.

#### 57. Annular Vaults.

Horizontal and inclined annular vaults were likewise included in the circle of their works, especially on the under surfaces of the great winding stairways of various palaces, for example, the Palace in Caprarola, Palace Barberini and Palace Vatican in Rome.

As an example of a small spiral stairway, vaulted above and beneath, may be mentioned that in the double dome of S. Maria da Carignano, where the ascending annular vault is executed in a very appropriate way.

#### 58. Vaults of Slabs of Stone.

A peculiar vault is composed of stone slabs resting on transverse arches, which extended from arch to arch and are joined by rebates into the arched form.

Roof slabs over vaults are well known,-- we find them on the Cathedral in Milan, on the Loggia dei Lanzi in Florence, and on this side of the Alps on the Cathedrals of Strasburg and Freiburg, -- but they there lie overlapping like great roof tiles, forming an inclined plane, and they do not have the shapes of voussoirs, designed to form the ceiling and roof.

The only construction of this kind in a noble style known to me was executed on the Cathedral in Sebenico by Master Giorgio Orsini. On a system of semicircular transverse arches 2.46 ft. wide and 1.94 ft. deep lie stone slabs 9.5 to 13.6 ft. long, according to the dimensions of the bay, coursed in semicircular form and joined together, externally stepped, internally showing a smooth surface, and thus forming both the ceiling and roof. The slabs have on an average a width of 2.46 ft. and vary in the different bays from 14 to 15 in number, while the transverse arches are composed of 13



voussoirs. The latter have internally sections like an architrave with bands and small rounds, but externally have rounds with deep recesses between them, animated by deep incisions (Fig. 67 f), concerning which it must be stated, that on account of the good condition of the roof, the bearing of the slabs on the arches and their joinings could not be determined by me; the detail section given in Fig. 67 f is problematical, but must correspond to the reality.

The side thrust of the transverse arches of the vault over the central aisle is directly resisted by iron rods, without which and with the thin external walls, the construction would certainly not have been durable.

The side aisles are similarly constructed, over which the vaults assume the form of a depressed quadrant. Five rebated slabs rest on circular transverse arches and here form the ceiling and roof. The steeply aspiring octagonal dome over the intersection is likewise constructed of slabs and ribs in the finest way.

A white local limestone serves as the building material, which today gleams white in the sunshine and only appears blackened in the interior by candle smoke and incense fumes.

80 As precedents in antiquity were only the vaulted buildings of central Syria of the period of Marcus Aurelius, and especially the ceiling of stone slabs over the Pretorium in Musmiye, that alone is practically covered in accordance with the construction in Sebenico. In the journal mentioned below<sup>42</sup>, I first took position in the matter on the suggestion of the learned editor Graus, an enthusiast for the art of the Renaissance. A study on the spot has fortified my opinion of the building.

Note 42. *Der Kirchenschmuck. Journal of the Christian Art-Union of the Diocese of Seccau. 17 th Jahr. (1886). Nos. 1-5.*

Note 43. *Compare further, De Vogue. Syrie Centrale etc. Vol. 1, pl. 7. Paris. 1865 - 77.*

But whether Master Giorgio had any knowledge of the Syrian buildings must be very doubtful; I do not believe in any connection of the structures in the Hauran with those in Dalmatia, nor in the derivation of one from the other. The natural con-





conditions of both countries (rich in stone and poor in wood) may have led to allied results; both methods may therefore be regarded as original, and we know of the Renaissance master, that he understood how to also express a mode of construction in good form and with spirit in the facade (Further, see under D, Chapter 30).

#### 59. Vaulted Wooden Roofs and Wooden Ceilings.

The form of the roof and internal ceiling of this stone Dalmatian church were also imitated in the Capital of the Republic of Venice, not constructed in like monumental manner, but in wood, evidence of which is given by S. Maria dei Miracoli, the little charming jewel of the Early Renaissance. The internal depressed cylindrical vault with coffers consists of a timber construction, that is partly suspended from the framework of a roof truss built above it in the form of a ship's hull (fig. 80). Ceiling and roof are thereby separated from each other by an accessible space.

#### 60. Buttresses.

When the direct resistance of the horizontal thrust of the vault by an iron tie-rod was impossible, there were arranged on the external walls at the points where supporting or transverse arches rested on them, either special forms in the ground-plan or projections of masonry, buttresses projecting internally or externally, thereby using the same means as the Roman antique and the middle ages. Only that they were made to project greatly in the North, usually far beyond any necessity. (Compare Cologne Cathedral and other monuments).

This unnecessary size was dropped in the South as unjustifiable. The buttress with offsets was not adopted on the Cathedral of Milan, and just as little on the Certosa near Pavia and on the Cathedral in Como. As the structure last named shows, they form during the Renaissance uniformly projecting wall-masses of moderate thickness, that rise vertically from a boldly projecting and moulded base to the main cornice, which is broken around the buttress. The angles are marked by shallow mouldings and the height is divided by transverse bands of the same section.

Following mediaeval precedents, figures and consoles animate



the front surface for the lower third of the height, recalling the canopied figures of the preceding art period, but with the difference, that the sculptor again freely expresses himself and is not limited to the production of esthetic figures placed in shrines.

A spire on this projection indicated in the middle ages the "dying-out of the masses, a deliverance from the forces striving upwards, pressing for development and equilibrium". The Renaissance transforms these for artistically sound reasons into a quiet cap, that terminates the lower masses in the most beautiful manner. Airy and open canopy structures rise above the principal cornice on a solid and bold substructure; their small curved domes with consoles, balusters, and obelisks, give a quiet and effective upper ending in well-conceived and beautiful outlines.

As in Cairo, so was it carried out in like charming manner on the Certosa near Pavia, especially on the side facade towards the small cloister della Fontana.

The Early Renaissance developed in these caps the entire magic of its imagination, the entire wealth of its treasury of form, its feeling for beautiful outlines, with architectural forms rising freely from the air. (Fig. 81). No terminal like another, yet they remain in harmony with each other.

#### 61. Water Spouts.

The collection of rain water and its discharge from certain parts of the building busied antique architecture as well as that of the middle ages. We find terra cotta and marble gutters on antique temples, public and private buildings, and gutters cut in stone on mediaeval cathedrals.

Simple channels, spouts in trumpet form, lions' heads or the heads of other animals (boar, panther) with open mouths, and masks, throw the water from the roofs of antique buildings far from the structure. On mediaeval monuments, these are fanciful figures and unclean beasts, through which the water is expelled, not to the advantage of the building, which frequently suffers more from these streams of water, than if rain water were permitted to take its free and natural course. (The roof gutters have meaning and value only in connection





with down spouts leading to the ground). The Renaissance made the same imperfection its own: but it shaped its water spouts incomparably nobler and more beautiful. Strange caricatures and comical, sometimes indecent figures, did not ornament its cornices; it inherited beautiful sculptured decorations for them; nude female and male figures bearing amphores on their shoulders, from which the water poured. On the Cathedral in Cano, they belong to the most attractive ornaments of the buttresses, where they are placed between the architrave and cornice, leaning closely against the wall in firm pose (Fig. 82). Just as finely wrought examples are found on the Palace del Comune in Brescia, above the main cornice and before the parapet of the attic. Somewhat ruder are those on the Church of S. Mark in Venice, between the oval shaped gables of the main facade. Everywhere are grace and elegance in detail, beautifully shaped human bodies instead of mediaeval abortions! In cases, where they could or wished to not go so far, men resorted again to antique spouts for water in form of lions' heads.

## 62. Coursing of Voussoirs; Bond<sup>of</sup> Stones; Stonecutting.

From antique and mediaeval methods of coursing stones and bricks in vaults, men did not depart during the Renaissance on the whole, in cylindrical, cross, niche, domical, and vaults with intersecting compartments, the voussoirs were always so set, that the bed joints extended from the centre or the middle line of the vault. In front arches, door and window arches, notched ashlars were also used, which appeared in Roman buildings of the late period, and especially when the voussoirs were required to join with the adjacent coursed ashlars of the facade in a certain way. For vertical arches, simple through radial joints were preferred, and the indented voussoirs of late Roman art were rejected (Orange, Spalato, Syracuse), which in the epoch of Theodoric led to wonderful things and falsified the stonecutting in vaults (Compare the jointing on the Tomb of Theodoric in Ravenna). Peculiar coursing in cross vaults with the use of stone slabs between ribs is found in the side aisles of the Cathedral of Sebenico.

*Note 41. See Part II, Vol. 2, p. 154, of this Handbook.*

For round-arched openings, doubly indented ashlars reappear



in the 17th century on this side of the Alps on German Renaissance buildings (like Palace Stetten<sup>near</sup>, Lorrach, etc.), as well as on mediaeval structures (for example on the choir arches in the Castle Chapel at Krautheim in Baden, where the keystone has two semicircular projections and must have been slid into place from the front). Did these buildings in Baden, 1000 years later, find suggestions for such jointing indeed in Ravenna?

But in brick vaults, it is known that a departure was made from the usual position of the voussoirs, as the great constructions of S. Peter's and of S. Maria dei Fiore have shown, where herring-bone coursing of the voussoirs was adopted, and dovetail vaulting was brought into use in other places for cross and cylindrical vaults. On the vaults of the beautiful double aisles of a loggia near Gate Porta Pusteria in Mantua (Fig. 83), I could determine this in the year 1871, where a part of the plastering had fallen off from the surface of the vault, and in 1892 on the cylindrical vaults with intersecting compartments in the Refectory of S. Maria delle Grazie in Milan, where repairs were then being made on the ceiling.

## Chapter 8. Roof Construction.

### 63. Roof Trusses.

The flat roof was never abandoned in Italy at any time. What the ancients had devised continued in honor from the early to the late middle ages and even during the entire period of the Renaissance down to our time. The German masters of Gothic had to take it into account on Italian soil; the steep roof of the North was refused as something opposed to the purposes. Under such conditions, it cannot be surprising, that the conservative South presents nothing new in this field of construction. No architect progressed beyond the antique roof with rafters, and the different style periods only make this difference, that some leave visible the construction of the framework of the roofs within their porticoes and churches, while others conceal it from the observer by a horizontal inserted coffered ceiling.

Greeks and Romans would indeed have scarcely left visible the construction of the roof on a monumental building; the

*See p 98, 2 pages over*





and ornamental painting, and this is said with reference to the ceilings in Palace Doge in Venice, -- these ceilings belong with the most splendid created by the Renaissance, indeed with whatever in this kind, that has been done in the world generally. The highest total of ability here appears, and what magnificence and feeling for beauty are apparent! Likewise in this respect, the Renaissance is new and creates without precedent!

These wooden constructions are all built of accurately hewn and framed timbers. The wealthy commercial city of Genoa made an exception from the ancient rule in like structures and returned to a tolerably primitive mode of construction with the highest elegance of execution in other materials, which we elsewhere find only in well-wooded mountainous regions. Instead of hewn timbers, round timbers with the bark removed occur, just as supplied by the forest, though the the ancient roof with rafters is still retained.

Gauthier first described these structures in his work mentioned below, and I reproduce in Fig. 87 one of the most interesting examples; the construction of the ceiling and roof of the Bourse built by Alessi, which I verified on the building, and whose detailed dimensions I measured again in 1899.

*Note 45. Gauthier. Les plus beaux Edifices de la Ville de Genes. Paris. 1830.*

Where building timber was procured with difficulty, the Renaissance retained the ancient methods; instead of dressed tie-beams, masonry arches received the inclined rafters or the purlins, the timbers being chiefly of small dimensions with horizontal widths depending on the size of the bricks, so that, for example, those in the roof-trusses of the roofs over the portico of S. Lorenzo in Florence and in the Badia near Fiesole are only 13 3/4 to 15 ins.

#### 64. Fire-proof Construction of Ceilings and Roofs.

A peculiar massive construction is shown by the ceiling and roof over the great hall of the Palace Ducal in Genoa (Fig. 88), measuring 118' x 52.5 ft., the former being treated as a segmental vault, the latter like a ship's hull, which we have already learned to recognize in Venice. The Palace was orig-

*See p. 80, two pages over*



coffered ceiling mentioned always formed the covering of the room. The same must also have been the case with Early Christian buildings, and it was omitted only where means were limited.

The masters in the middle ages were permeated by the same views, who constructed the ceilings of S. Zeno and S. Fermo in Verona, of S. Stefano in Venice, etc. They did not desire the antique method of covering the interior, nor wished the wooden rafters of the roof to not be visible (Fig. 84) and thus offered something new. The Proto-Renaissance could only manage the ancient roof truss; but as they left it visible, they also made it an object of artistic treatment; they ornamented and painted the woodwork and added sculptures (consoles and decorative bands) to it, as the beautiful visible roof trusses of S. Miniato near Florence with its painting (certainly restored) shows.

But the awakened Renaissance rejected these two gifts; it either left the roof truss visible, and this only in a few cases, where simple buildings were covered (S. Francesco al Monte, --- "la bella Villanella of Cronaca, 1504), or it already in the Early period decidedly returned to the simple coffered ceiling, whose finest example in varied coloring is indeed to be seen in S. Marco in Rome and in a design in White and gold in the central aisle of S. Maria Maggiore in Rome. But in this a carpenter's framework of heavy timbers was not strenuously retained in the sense of the Greek stone-beam ceiling, the continuous tie timbers of the double tie-beams were rather employed as structural beams, between them being inserted coffers of light joiner's work in boards. To this mode of construction was added the execution of completely independent coffered designs (Figs. 85, 86), as they finally appeared on the vaults of the Roman Baths and on the Basilica of Maxentius after the rejection of each form derived from the construction. The combination of small and large coffers of every shape, -- not excluding the circular form, -- frequently with rich carved work, as on the ceiling of the Badia in Florence among others, was the final result. In connection with gilding and color and with the addition of figure





originally built by the Lombard architect Andrea Vanona. It almost entirely burned down in 1777, when the Genoese architect Simone Cantone was in 1778 entrusted with the rebuilding under the condition, that no wood should be used in the roof. He solved the problem in an interesting way. Fifteen great brick arches of about 2.46 ft. depth were placed at regular distances above the segmental vault: these arches are connected at their crowns by brick arches, on which beside every other arch are fastened iron tie-rods extending down to the ceiling vault, which they aid in supporting. The arches are about 4.60 ft. apart and they are further joined at the crown by three large slate slabs, and further in four arches directly over the segmental vault, through tie-rods are set. Against the great cylindrical vault built in this way, two hip roofs transect, whose ridges are likewise built as brick arches, on which rest smaller arches like hip rafters.

The two arches lying next the ridge are joined by a S. Andrew's cross of masonry, while the succeeding ones are close together and their thrust is resisted by stone beams (slate slabs). Slate slabs are then laid to overlap on the exterior, extending from arch to arch, just as in Sebenico, and these support a layer of mortar in which are embedded the smaller roofing slates, like the method on the roofs of S. Maria de Carignano.

## Chapter 9. Stairs and Stairways.

### 90. Stairs.

With the changed manner of living, arrangements also became necessary in palaces and houses, unknown to the earlier period. In antiquity, living on the ground level was esteemed as the only distinguished one, suitable for the nobles and the wealthy; dwelling in rented houses of several stories in imperial Rome was left to "misera plebs contribuens", who could only gain access to their stories by straight and narrow wooden stairways.

In mediaeval buildings in several stories with bays and windows on the street facade, the staircase already plays a more prominent part; distinguished occupants of a separate house withdrew to a higher story and left the rooms in the ground



ground story to servants, to shop-keepers and mechanics in cities; the wealthy citizens did likewise.

Consequently the wooden or stone winding staircase, occupying less floor area, competed with the straight one, concerning which it must be said, that ancient Rome was acquainted with it, to judge from the still existing spiral staircases in the Columns of Trajan and of Marcus Aurelius. Masonry winding staircases in circular rooms are also partially preserved in the imperial Palaces at Treves and at Arles. Winding stairways characterized the entire period of architecture on this side the Alps; they could easily be arranged in any part of a building and for each story, which was indeed a reason for their being generally preferred.

In the Renaissance period, living in the upper story became a requirement for prominent persons; the "piano nobile" or "piano reale" in palaces is always the first upper story in Italy (second story in U.S.). If the usual unrest and party fights in the cities made this change necessary for reasons of safety, it was further adopted as being a pleasure, to be able to view the life and action in the streets from a secure point of view.

What the antique house forbade was permitted by the mediæval, and still more by those of the Renaissance.

#### 66. Stairways.

The distinguished residence in the upper story required an improved access thereto, and thus the winding staircases were replaced by the larger stairways in two flights with a landing between them, straight and easily ascended; the proper stairway of the nobler style was adopted in house architecture, and thus a new impulse in the artistic treatment of the house was introduced for architects. And this is again a merit of the Renaissance, and it again created in this a new idea without precedent. But it retained herein for service and traffic the winding stairways with and without steps, the latter passable by mules, or they gave to these greater dimensions, a monumental form and richer ornamentation, like the winding stairway in the oval room in Palace Vatican by Bramante, that in the Villa Papa Giulio, in Palace Borghese, in





Palace Barbarini in Rome, among others.

The straight mediaeval stairways with landings in public buildings and palaces are mostly open, in enclosed uncovered courts (Bargello in Florence, Palace della Ragione in Verona); those of the Early Renaissance are chiefly within the porticos surrounding the courts, but half protected against wind and weather (Palace Arcivescovile and Palace Gondi in Florence). In Tuscany, the flights of steps are generally covered by cylindrical vaults, while in Genoa, stairways with columns and cross vaults predominate.

*Note 46. A tolerably comprehensive collection of designs for stairways, although in the form of fugitive sketches, yet characteristic, well chosen and drawn, is to be found in Mylius, C.J. Treppen-, Vestibul- und Hof-Anlagen aus Italien. Leipzig. 1867.*

The first entirely convenient and broad staircase is that designed and built by the younger Antonio da Sangallo in Palace Farnese in Rome, compared with which all earlier examples seem steep. It is very easy to ascend and is best suited to the stride of a man of average size.

Leon Battista Alberti requires in Book 1, Chap. 13, of his Treatise on Architecture, an uneven number of steps and of landings (pianerottoli) in a flight, the rise of the step to be not over  $1/4$  or less than  $1/6$  braccio, the tread not less than  $1\frac{1}{2}$  ft. nor over one braccio. In his famous Farnese stairway, Sangallo assumes a rise of  $5\frac{3}{4}$  ins. for a tread of  $21\frac{1}{8}$  ins., and he gives the treads an inclination of  $11/16$  in. forwards, the treads being finished with roll-moulding, fillet and cove.

After this construction, no more defective stairways were built, so long as sufficient means were at command. But the stairways and the number of steps increased in time in the larger public and private buildings in the period after the High Renaissance, and especially in the Barocco period, to become architectural works, that were no longer in proportion to the useful apartments in the building, but always formed the most magnificent portion thereof, adorned with costly materials, noble sculptures and rich paintings. They became



art works of the highest rank in themselves; whether executed at a large scale or in more limited proportions. They are the pride of the Barocco palaces with their great width, low steps, convenient landings and stone balustrades.

In costliness and magnificent coloring of the marble, the stairway of the Palace in Caserta stands alone; in grandeur of design with good proportions, the palm is due to that of the Brera in Milan, and to those of nearly all Genoese palaces, particularly that of the University there.

The Scala Regia in the Vatican should be included with these in spite of the simplicity of its design.

Marble, travertine, and other limestones, sandstones, slate, and bricks, were employed in the construction of stairways; richly carved wooden stairs in the style of the German and English Renaissance are unknown to me in Italy. Those of stone are built both self-supporting as well as extending between two solid walls or supported by vaults.

92.

## Chapter 10. Orders of Columns and other Architectural Details.

"Whoever throws off the restraint of the columnar orders must create for himself another canon for them, or directly disown the characteristic and subjective expression in architecture, to adjudge to them only the right of a general typical meaning. Whoever knows no restraint, his art falls into formless and meaningless arbitrariness. The presumptive inventor of a new canon has in the best case only deceived himself and not changed the nature of the old. Yet had he succeeded in the latter, so would he have thereby won fame for the exclusive possession of his art; for no one except him would so quickly understand it. Herein Architecture shows itself just as inflexibly conservative as music."

Semper. Der Styl. Vol. 2. p.372(1).

### 67. Survey.

The circle of architectural forms within which the Renaissance in Italy moved, the architectural language in which it speaks to us, are not so closely limited as many dillitantes and writers on art would gladly have themselves and others





believe, and in apology for them it may also be said, that the expression of form is a "borrowed" one and not so important. Everything is borrowed at last, even if this be from highly esteemed mother nature; one stands on the shoulders of another in art and in methods; but the most modern man speaks of the "broaden paths" of the Renaissance, and it may well be said, that only the fewest of these have become common roads, and others cannot be traveled by all at present. Paths followed by an Alberti, Brunellesco, Bionardo, or Michelangelo, artists in whom we honor the highest flower of the intellect and of creative power given to us by a good providence, are not to be mistreated, frequently against better knowledge, by artist cliques and their poets, and likewise not by those, who regard art as fashion and a cow to be milked, in order to draw attention. And if a later time asks for the names of such heaven-storming heroes, who wished to patch up the gigantic men of the Cinquecento somewhat, one may say like "Fameau's nephew"; -- "Hem! Grimm! Grimm! Who was Grimm? Ah! He that was once abused by Rousseau?"

*Note 47. Compare Brachvogel, A.E. Narcissus. A Tragedy. 7th edition. p. 15. Jena.*

Whoever can and will see and understand will soon convince himself, that the masters of the Renaissance were not in their works thoughtless repeaters of the antique in any certain period, nor even in details, that already in the beginning, they did not understand how to estimate their value. Also the detail forms of their buildings are not once entirely antique; many of them are permeated by the northern spirit of the Gothic. For example, the window sill courses of the Tuscan palaces are anything else than severely antique in section; even the details of the intellectual Alberti, rich in knowledge, on his Palace Rucellai are not so. The former still shows on the frieze the mediaeval dentils, on the latter, neither the capitals nor the bases of the pilasters on the ground story are of purely Roman forms. Likewise the arrangement of the principal entablature on Palace Strozzi is not strictly Roman, since the architrave is wanting below the frieze and shrinks to an astragal, and more of the same.



But these were not accidental occurrences: they were possible only for the reason of a preceding thorough study of the antique; without which they would not have been in condition  
 93 to create anything new, that was again only possible, when it was sought to base both the forms and the structural nature of Roman architecture, with its ground-works, on the domain of vaulted construction. The later must especially attract, as the great work of Brunellesco shows, and Formigini would never have attained to such free conceptions and novel treatment of forms in his magnificent capitals in Bologna, had thorough studies of the antique not preceded them.

#### 68. Orders of Columns.

This study is attested by the measured drawings of ancient monuments preserved to us, and by the system, which they based upon these. All masters, from the co-founder of the Renaissance in Italy, the learned and highly cultured architect Alberti, to the theorists Vignola, Scamozzi, etc., devoted themselves to the so-called columnar orders and fixed their canon. Alberti busied himself with them in his book "dell' Architettura", Book VI, Chap. 13, and Book VIII, Chap. 9, et seq., and there expresses himself thoroughly concerning the swelling of the shafts of the columns, for the execution of which he gives the rule (fig. 49<sup>48</sup>). He expresses himself in a more comprehensive manner on the orders in general in his Essay on the  
 100 Five Orders of Columns.

Note 48. *"Chiamesi ventre, e pare che in quell' luogo 'la colonna gonfi alquanto"*.

Note 49. *Leone Battista Alberti's Kleinere Kunsthistorische Schriften, published in the original text, translated into German, explained, and supplemented with notes by H. Janitschek. Vienna. 1877.*

The annotations of Alberti follow verbatim in Janitschek's excellent translation, to them being added facsimiles of the drawings of Vignola, whose originals I once purchased in Rome from a dealer. With reference to the sheet with the principal cornice, where among other things it is said in the accompanying text (Fig. 90; "Con tutto che sia di mia intentione", ---  
 I hold the pamphlet of 42 pages 17 1/8 x 10 5/8 ins. to be





genuine, and therefore the reproduction of the drawings concerning us here, to be of value.

"The Five Orders of Columns.

a. The Tuscan order (Fig. 91). Although Vitruvius treats of the Tuscan order of columns in the fourth Book after all the others, yet it appears to me in place, when all four orders are allied in architecture, to raise from neglect and to first treat of that one, which is the strongest and possesses the greatest supporting strength.

1. The shaft of the Column. -- The Tuscan column must have six diameters, which diameter is always that of the lower end of the shaft.

2. The base is made one-third a diameter. This (height) is halved; one-half falls to the plinth; the other half is again divided into 3 parts; two-thirds of it falls to the lower torus (bolster), the remainder to the band (apophygé) at the lower end of the shaft.

94 3. The Capital. -- The height of the capital is to be made equal to the half diameter of the lower end of the shaft; the projection equals the lower diameter of the column. The entire height of the capital is divided into 3 parts; one part is given to the abacus, another being assigned to the echinus with the fillet, wherein the fillet is made one-sixth of this part, - the remainder falling to the necking; the astragal with the fillet has half the height of the necking; divided into three parts, two fall to the astragal and the other to the fillet. The upper end of the shaft is to be divided into 6 parts; if one part be taken away on both right and left, the column will then be diminished in the manner appropriate to it.

4. The Architrave. -- The height of the architrave equals the diameter of the upper end of the shaft; the taenia occupies the sixth part of the architrave.

5. The Frieze is of the same height as the architrave.

95 6. The Cornice is likewise divided into 4 parts; one part falls to the echinus (bed moulding), another to the fascia, 96 the two remaining parts to the corona (?); its projection equals 98 its height.



7. The projection of the Base is determined by circumscribing a square about the lower end of the shaft, then drawing a circle through the corners of the same, which gives the projection of the base.

8. The Pedestal equals in height the projection of the base; to it is added a band above and beneath, which will have suitable proportions, if they have the fourth part of the given height.

b. The Doric Order. (Figs. 92, 93). -- The Doric order is to be treated as follows. The column is first divided into 14 modules; one module gives the base; another falls to its capital.

1. The Base is divided into 3 parts; one part falls to the plinth; the two other parts are subdivided into 4 parts, one of these is given to the upper torus, the three remaining parts are halved, one-half is assigned to the scotia with its fillets (quadra), the other half gives the lower torus. -- Its projection will be the same as in the Tuscan order.

2. The Capital. -- The height of the capital is divided by three; one part gives the abacus with the cyma, when the cyma should have one-third the height of the abacus; the second part is intended for the echinus and the rings, two-thirds of it falling to the echinus and the other third to the rings, of which there are three, entirely equal; the last third of the capital will be the necking. The astragal with the fillet will have one-twelfth the diameter of the column, the latter being two modules. The moulding (astragal) is subdivided in 3 parts; two-thirds fall to the astragal, the rest to the fillet. The projection will be the same as the diameter of the shaft at the lower end.

3. The Diminution of the column. -- The column must diminish by one-sixth, thus one-twelfth in the outline on each side; the same method is employed for this as in the Tuscan order.

4. The Architrave. -- Above the columns, the architrave is made one module in height, the taenia of the same will have the sixth part of a module, the drops with their regula will have one-fourth the architrave. If the height of the drops





with the regula be divided into 4 parts, 3 parts fall to the drops and one to the regula; care should be taken that 6 drops are required. The triglyphs are placed above the architrave; they have a height of  $1 \frac{1}{2}$  modules: between each two triglyphs is found a space equal to the height of the triglyphs; in this space, which is termed metope, heads of oxen and rosettes are sculptured. The cap of the triglyph is the sixth part of a module.

5. The Cornice. -- Above the triglyph is placed the cornice, which has a height of one module, in which height is included also the cap of the triglyph. The remainder above this cap is divided into two parts; the one part falls to the cyma with its fillet, the other part to the fascia with the lower moulding. The said lower moulding will have one-third of the cyma and of the corona. The projection equals the height of the cornice and by so much the more, as the upper cyma projects beyond the fascia.

6. The Pedestal. -- The pedestal is made as wide as the base and  $1 \frac{1}{2}$  times as high as it is wide, exclusive of the upper and lower mouldings (cap and base). The said stylobate (pedestal) is to be divided into 5 parts, and the cap and base are each to be made equal to one of the said parts. The cap is divided into 4 parts; two of these parts serve for the cyma, another part for its moulding, and the fourth part for the astragal with its fillet. The base is divided into 3 parts; the one-third falls to the upper torus with the fillet, the two other parts to the lower torus. The projection will be as great as the height of the cymatium. The plinth beneath the pedestal is not included therein, but it devolves upon the preference of the architect."

(Book VIII, Chap. 8 of the 'Alberti bears the title:-- Del Capitello Dorico, Ionico, Corinthico e Toscano. On plate 25 of the edition by Cosimo Bartoli (Bologna, 1782), the Doric capital is given in two different forms, that differs essentially from the conception of Vignola, for they show certain Roman examples. It is especially drawn with much less projection than in the corresponding plates by Vignola.)

"c. The Ionic Order. (figs. 94, 95).



1. The Shaft of the column. -- The shaft of the Ionic column must have 8 lower diameters.

2. The Base will be as high as is the case in the Doric order. To the plinth falls one-third (this height), the remainder is subdivided into 7 parts; with three of these is made the upper torus, with the remainder the scotia with its astragals and fillets. The projection will be as for the Tuscan (base). The shaft is diminished as in the Doric order.

3. The Capital is made one-third the lower diameter of the shaft in height. But the volutes may hang down as much as amounts to half the diameter.

4. The Architrave. -- The height of the architrave has to be one-twelfth the height of the column, one-sixth of the said height falls to the cymation. The remainder is subdivided into 12 parts: 3 of these parts fall to the first fascia, 4 parts to the second, and 5 parts to the third.

5. The Frieze. -- If the frieze be covered by sculptures, then make it about one-fourth higher than the architrave; if the sculptures be omitted, then make it about one-fourth lower than the architrave.

6. The Cornice. -- Above the frieze is made the cyma, and its height will be one-sixth of the height of the frieze; above the cyma are the dentils, just as high as the middle fascia of the architrave; above the dentils is found the cyma with its fillets of equal height. The projection of the entire cornice will equal its height.

7. The Pedestal. -- The height of the pedestal is made equal to the distance from the bottom of the base to the beginning of the diminution of the column. --- The said pedestal is divided into 8 parts; one of these falls to the base and another to the cap.

8. The Flutes. -- If the columns have flutes (striae), it will have them to the number of 24, and the flute is thrice as wide as the fillet.

9. The Volute with the cyma is divided into  $9\frac{1}{2}$  parts;  $1\frac{1}{2}$  parts fall to the cyma, and the volute is made of the 8 remaining parts. The eye of the volute is placed at the middle of this height (thus at the 4th division), and when a





circle is drawn to the extreme points above and below, the projection of the said volutes is obtained.

The Ionic capital of Alberti substantially coincides with that of Vignola, excepting that the former has a higher abacus; the spiral about the eye of the volute is likewise richer by one turn. Vignola further gives a construction of the volute, which we add in Fig. 95.

#### d. The Corinthian Order (Fig. 96).

1. The Shaft of the Column. -- The Corinthian column is made 9 diameters high; one of these diameters falls to the capital.

2. The Base is made half a diameter; the remainder falls to the shaft, as stated for the Ionic order. The plinth of the base is made the fourth part of the height of the said base; the remainder is (again) subdivided into 4 parts; one of these serves for the lower torus, the three remaining parts are divided anew in the same manner, and with these are made the two scotias and the astragals, as stated in the Ionic order.

3. The Capital is made in the following manner. The abacus will have the sixth part of the height of the same; the cyma has one-third of the height of the abacus. The moulding of the bell amounts to one-ninth of the remainder of the height of the capital. The bell is divided into 3 parts; two of these will serve for the foliage, the third for the volutes. The projection of the abacus must be so great as to stand vertically above the plinth of the base. The upper astragal with its fillet will be as large as the projection of the column (88).

4. The Architrave will be like the Ionic, excepting the astragals or beads, which occupy one-eighth the respective fascias.

5. The Frieze will be treated as in the Ionic order; but it will lack sculptures, if it be not somewhat higher.

6. The Cornice will be similar to that of the Ionic, exclusive of the cymatium, and it will indeed be so much higher (like the Ionic cornice) by the height of the cymatium, for which the size of the middle fascia is required.

7. The Pedestal is just as high as the distance from the beginning of the base of the column to the end of the swelling of the same, as this was arranged for the Ionic order.



The capital of Alberti entirely coincides with that of Vignola, but the latter also furnishes a construction of it here. (Fig. 97).

e. The Roman Order (Fig. 98).

1. Shaft and Base. -- The Roman order was put together and arranged by the ancient Romans. Since they desired to design a column, that should be more slender than the Corinthian, they made the column 10 diameters high, including the capital and base. The base may be made equal to the Ionic or Corinthian base, at the pleasure of the architect.

2. The Capital is subdivided in the following manner. Its abacus will be like that of the Corinthian order, the volutes are equal to the Ionic; the foliage is like that of the Corinthian, and the columns diminish like those of the other order.

3. The Architrave will be as high as the lower diameter of the shaft; it is subdivided like the Ionic.

4. The Frieze. -- If medallions exist, then the frieze is made the same height as the architrave.

5. The Cornice. -- The cyma of the consoles has one-sixth part of the height of them: the width of the consoles is equal to the lower diameter of the column (?), i.e., when they are placed at a great height; if their distance from the eye be little, their width must be a fourth part less. And the distance between two consoles must at least equal  $1 \frac{1}{2}$  modules or even more, since they will then appear narrower to the eye. Its fascia with the cymatium must be as high as the lower diameter of the shaft; if this height be divided into two equal parts, then one part falls to the fascia and the other part to the cymatium: the fascia will have a projection equal to the height of a console, and the cymatium one equal to its own height.

6. The Pedestal. -- The pedestal will be made as stated in detail for the Ionic and Corinthian orders, i.e., its height equal to the distance from the beginning of the base to the beginning of the diminution of the column."

The Composite of Alberti, which he terms "Latin" in his Minor Essays, likewise coincides with that of Vignola, who likewise gives the construction of the capital. (Fig. 99). A draw-





drawing of the Tuscan capital is reproduced from Vignola alone; it is wanting in Alberti.

In addition to these rigorous forms, antique art likewise already afforded fanciful shapes of the most varied kind, and even the so-called period of decadence here exhibits novel forms, frequently of the most original kind, like capitals in Eleusis, Fome, and other places.<sup>50</sup> However much the masters have measured, studied, and theoretically derived from the ancient monuments, they did not stop with this, and scarcely one reproduces without abridgement, what the antique had taught him. As persons of intellect and taste, they could give again what they had received, as it might be; what had been adopted was much rather worked over intellectually, and from it were derived those useful applications, that astonish us in their works.

*Note 50. Compare Part II, Vol. p. 291 and Vol. 2 p. 245, 259 and 261,\* of this Handbook.*

No attempts at a restoration of the ancient forms, rescued from the storms of time, meet us here; new life springs from that received, from the fountain of the ever beautiful, disturbed for a brief space of time.

#### 69. Doric Capital.

The Romans already no longer knew how to commence with the strictly geometrically developed Doric capital of the Greeks; the Tuscans transformed it into a fresh work, the weakness in the transition from the square abacus to the circular echinus being better softened, than Roman art did by the addition of rosettes on the lower triangular angles of the abacus. From the echinus spring four scrolls, that bend down towards the lengthened necking of the capital and there expand into leaves. This further development of the Egyptian-Grecian endeavor to discover a beautiful transition from the square slab to the free pillar, that attracted the Romans, wherein the middle ages only succeeded in a rude way, the Renaissance brought to completion in a spirited manner (Fig. 100). This is a development and not a resuscitation of the dead!

#### 70. Ionic Capital.

For the Ionic capital, the Greeks had already created enough alternative forms in the Attic-Ionic and Aeolic-Ionic



styles, to which Roman art could not add much, for it rather flattened this art form, and there is then the peculiar treatment, that we find in the crypt of the Cathedral of Fiesole, (Fig. 101), which the Renaissance has imitated naturally in the fore-court of the Maddelena de' Pazzi in Florence (Fig. 102), and which we may designate as an acquisition.

109 Rather might I approve the capitals on Palace Poggio at Cajano, not far from Florence, that permit the volutes to spring from a bell covered by pipes, after the manner of the Corinthian capital. A solution by Vignola (Fig. 103) in which the volutes are curved outwards somewhat and their eyes are joined together by a laurel garland, whose very high abacus is partly concealed by a mask, and the Ionic capital of the columns in the cloister of S. Lorenzo in Florence (Fig. 65) with consoles attached to the wooden cap, exhibits a peculiar conception and a further development of the ancient motive.

The outward curling of the volutes, like shavings from a plane, according to the model of a capital from Pergamon (now in the Berlin Museum), also shown by the capitals of the German Renaissance, was not imitated in Italy during the good period.

#### 71. Corinthian and Composite Capitals.

And now first appears the wealth of variations upon the theme of the ancient Egyptian bell or calyx capital, on which the peoples of all time have labored with more or less skill, and even also on its translation into the flat as a pilaster capital! The middle ages took up this antique motive just as Zealously as the Renaissance; but the latter employed greater freedom, a greater variety of decorative expedients; and especially a far superior refinement in the treatment of details. Human figures move in the conventional or naturalistic foliage; with them alternate heads, animal forms and emblems; pleasure and pride, a gushing imagination, contend in the ornamentation of this form of capital, and the originality and mastery, the grace and the feeling for beauty of the Renaissance masters, here appear in their highest development (Figs. 104, 105).





## 72. Shafts of Columns, Pillars, and Pilasters.

What is true for the capitals must likewise be claimed for the bases and shafts of columns, pillars, and pilasters, as well as for the entablatures lying on them. Fresh life pulsates in all parts, the endeavor to create new things in the ancient spirit appears, but there is no dressing up of resuscitated ideas with faded flowers.

All forms of free supports known to the ancients were adopted without hesitation by the Renaissance; pillars of square, rectangular, and of octagonal section, half, three-quarter, and entire columns, the pillars frequently diminished (Palazzo), columns with diminution, with or without swelling, were brought into use, in which the shafts of the pillars, columns and pilasters were left smooth, or were fluted in the antique manner, corresponding to the orders, with or without eabling, the surfaces decorated by foliage (Palace Vecchio in Florence), or the flutes were spirally twisted (Palace Bevilacqua in Verona).

On other columns, the spirals extend over only the lower half of the store, while the upper portion is covered by naturalistic foliage and candelabras in low relief. (Court of Palace Buoncompagni in Bologna). Again in others, the lower third is adorned by little figures and garlands (School S. Marco in Venice), or the shafts are intersected by bossy ash-lars of the most varied forms and cutting (Fig. 106; Court of Palazzo Pitti), or treated like arabesque masonry (Fig. 107; Palace Fantuzzi in Bologna), or the columns bear rings around their shafts, like those of the German transition style (Palace Bevilacqua, via Zucchini, in Bologna), where the base slabs are likewise of octagonal form.

Still other columns possess bands on their shafts, repeated in adherent form in the vicinity of the capitals; others exhibit naturalistic garlands of leaves freely laid on the fustes (Portal of S. Maria della Grazie in Milan, School S. Rocco in Venice).

Some columns in the court of the Benedictine Monastery in Milan are treated like trunks of trees with trimmed knots, recalling the late Gothic bough-work in the window architraves of



Palace Quaratesi in Florence, on whose origin and importance interesting conclusions are given by Meyer in the book mentioned below.<sup>51</sup>

*Note 51. Meyer, A. G. Oberitalienische Frührenaissance. Buildings and Sculptures of Lombardy. Part II. p.77. Note 1. Berlin. 1900.*

### 73. Pillars in form of Candelabras.

Besides the conical shafts of columns mentioned, there also occur as original forms, supports in the shape of candelabras, especially in Upper Italy. They are simply treated the stairways of Genoa, where they are frequently strongly loaded; then richly and in a charming manner in the side aisle of S. Maria dei Miracoli in Brescia, where the shaft appears from an acanthus bell and is ornamented at top by suspended festoons.

These candelabra pillars are in all cases employed in combination with pedestals, in order to permit them to appear more stable (Fig. 108).

On portals and monuments of the Early Renaissance, they continue to be a favorite accessory, where their form and rich ornament likewise seem more endurable, than by their use as strictly considered free supports.

### /// 74. Construction, and Peculiarities in Form.

Sandstone (Florence), travertine (Rome), marble (Venice and Genoa), bricks without stucco in Bologna, and with a coating of stucco (Vicenza), are the materials employed therefor.

The surfaces of pilasters were often enclosed by a frame, the panel of the frame being filled by scrolls or grotesque ornaments (portals of palaces in Verona, Palace del Consiglio in Verona, and many buildings in Bologna and in Venice), forms that belong rather with the characteristics of woodwork in the interiors of buildings, than with those of external monumental architecture (Compare the wooden pilasters from Siena in Figs. 109 to 111).

/// The stonecutting of the shafts of columns is the usual antique kind, where the astragal of the capital and the apophyge on the base are wrought on the same block as the shaft.

The Renaissance preferred monolithic columns, to which it





1/2 was attracted by the great abundance of them from antique times, while the Protorenaissance and the middle ages, as well as formerly ancient Greece, more frequently employed the construction with separate drums. Moreover, there are antique Roman columns, that exhibit the mediaeval practice, where the panel is wanting, as for example, on the splendid shafts of the columns in S. Zeno in Verona, wrought from red marble.

The projections at the transition from the circular bases of the columns to the square plinths no longer occur in the best period of the Renaissance, although these are anything but a mediaeval invention; they are already to be found on the bases of the columns of Palace of Diocletian in Spalato and are a late Roman invention, that indicates progress in form and construction.

We find them transformed in the centre aisle of S. Zaccaria in Venice, where the transition from the octagonal base to the square plinth is made by consoles with foliage additions. But the transition is effected in the most beautiful manner on the columns in the Cathedral of Castrogiovanni in Sicily, where on the bases, chimeras with garlands of fruits and flowers form the change from the attic base to the square plinth,-- a work of the year 1507, according to an inscription.

If wooden beams rest on stone pillars, then a carved wooden cap-piece is inserted between the beam and the capital, according to the ancient Persian precedent (Persepolis, Hall of Xerxes, already changed into stone), (Fig. 110). But if stone beams are laid thereon, it is treated in the antique way. If arches are substituted, then the Renaissance adds nothing new here; it employed the three methods of setting the arches thereon used in Roman antiquity<sup>152</sup> and either interpolated the entire arrangement of the Roman entablature with architrave, frieze, and cornice (S. Annunziata in Florence), or it is satisfied with a stunted entablature after the Byzantine custom, when it provides a plain or decorated impost block with crowning mouldings (Maddelena de'Pazzi, Innocenti, etc. in Florence), or it places the archivolt directly on the abacus of the capital (S. Maria Novella, various cloisters in Florence and other places).



*Note 52. Compare Part II, Vol. 2, Fig. 241, p. 264, of this Handbook.*

The antique exhibits atlantes and caryatids as free supports. They reappear in the Renaissance, the former chiefly as supports of balconies at the principal entrances of palaces (Bolognan, Genoa), treated as complete figures and as hermes (Fig. 112). They are also to be found as the richest treatment of the window piers (Milan, Verona), and we see caryatids as lightly clad supportess in the Stanzas of the Vatican (Figs. 113 to 117). Antique caryatids stand detached like columns, exhibit a certain uniformity in design, but must always stand immovably with a burden on their heads, and suit the unavoidable. Those of the Renaissance are otherwise, which oppose their weight and passive resistance to the load laid upon them. Raphael has even assigned to his female figures another function in order to permit them to appear with more freedom. The idea of employing the human figure as a free support is everywhere the same; it recurs in all periods. But the embodiment of it in the Renaissance is totally different from that shown us by the antique. Here also is no stupid echo!

For the members of the architraves of doors and windows, as well as for cornices, the antique course is followed, in the earlier period, in a rather uncertain and fumbling manner; to the wide mediaeval architraves, which appear in the brick architecture of Upper Italy, have much influence herein, understood and fixed in the High and Late Renaissance.

The Renaissance is rich in picturesquely transformed details of antique architectural members. To mention all of them would fill an entire book; but I must refer to a few.

On cornices is frequently found the water-drip treated in a beautiful way, and indeed as an ogee moulding with applied leaves (Door in the Badia near Florence); then the fascia is ornamented by scalloped patterns on the architrave of the doorway mentioned, and on those of Palace Vitelleschi in Corneto; also simple or triglyph-like consoles with incisions and drops between architrave and cyme, on the frieze of the great main entablature, a motive that the great Bramante executed on a great scale on his Cancellaria and on the charming cloister of





S. Maria della Pace in Rome, that also occurs in the court of Palace Venezia in Rome, and reappears on Palace Fantuzzi in Bologna and on many Genoese palaces. Vignola gives a pretty further development of this motive in Fig. 90, where the antique horizontally projecting volute-console of the principal entablature is combined with the vertical console in the frieze.

The impost cap on the Arch of Septimus Severus in Rome is composed of a crowning cyma, a dentil-band, and the same supporting or projecting members; it thus shows the same elements in the same sequence as the window-sill belt-course of the Florentine rusticated palaces; except that the dentils are there flat and insipid. I have attributed these sill-courses to mediaeval influences, are they not really a reproduction of this antique impost cap in a less projecting form, and are not the mediaeval allied forms likewise based thereon?

#### 75. Ornament.

The ornament sometimes appears naturalistic, sometimes conventionalized, and figure ornament likewise. The ornamental mouldings are the egg-and-cart, heart-leaf, beaded astragals, interwoven bands, wave, fret patterns, adhering more or less closely to the antique. Bad and good occur together; the more severely Grecian forms have mostly disappeared.

The foliage on the capitals, the foliage scrolls, festoons of flowers, leaves, and fruits, the filling ornament and friezes are first executed in accordance with the material selected for them, then they are of their period, depending on the knowledge and invention of the master. Foliage in terra cotta must with reference to the properties of the material bear a character different from that executed in bronze; that made in wood, another from that in marble, and the latter is again otherwise than that wrought in sandstone. Hence only like may be compared with like, i.e., only woodwork with woodwork, stone ornaments only with stone ornaments, etc. And if we thus compare the works of previous ages with those of the Renaissance, our estimation of the worth of the last mentioned art period must be conceivably the highest.

The flora, on which its ornaments are based, is entirely native, accessible to and understood by all. It is reproduced



as it is, or is conventionalized to suit the material." The same is true of men and animals, when these were to be brought into the domain of architecture. For conventional ornament, the Renaissance chiefly relied on the antique. I say "chiefly", since this is not invariably the case, and it also created for itself.

Thus, for example, the large foliage on the capital in the court of the Innocenti in Florence has nothing to do with the antique, and the so-called acanthus has in its outline and surface treatment, both in good Roman as well as in the best period of the Renaissance, much more similarity to the leaves of certain species of oaks (Figs. 118 to 120), than to the well known acanthus. This is already true for the leaves of the Figa<sup>53</sup> of the Vatican, that magnificent example of Roman ornament, and the artist of the sarcophagus of Tomb Marsuppini in S. Croce at Florence (Fig. 121), that contemporary work of equal rank in the same stone, has neither given space to the antique treatment of the acanthus. A comparison of the two works is interesting: they both present the best of their time, and the work of the Roman appears more flexible than that of the Tuscan. Both follow the same grand idea; to allow naturalistic flowers and scrolls to spring forth from conventionalized large foliage, -- to combined conventional and natural together!

*Note 53. Compare Part II, Vol. 2, p. 250, of this Handbook.*

Where it is permitted to be entirely naturalistic, the ancients are almost of equal rank with the Renaissance masters. The candelabrum with the sprays of roses in the Lateran<sup>54</sup> is entirely naturalistic; nature is simply copied. The same is the case for various festoons, for laurel branches on marble friezes, that are to be found in the Museum Nationale in Rome, for different garlands of fruits and flowers on silver vessels and on bronzes in Pompeii, Naples, and other places.

*Note 54. Compare Fig. 251 of the same work.*

But when and where were more beautiful bouquets of fruits and flowers sculptured in marble, than on the pilasters of the Library in Siena (Figs. 122, 123)? Where are aspiring flower corollas, leaves, and buds, more delicately represented than





in the scrolls of the pilasters of Chapel Pellegrini in Verona? Who has understood better how to arrange garlands and wreaths of flowers beautifully, and to treat them with more truth to nature, than the Robbias in their majolicas, at least in form? Who has shown singing boys more true to nature than those artists? With surpassing mastership, the Renaissance masters are contrasted with everything created in this direction by others. A delicate observation of nature and an extraordinary feeling for beauty form the basis of their compositions with unusual skill in conventionalizing.

#### 76. Naturalism in Art.

Yes, the desire for change and the longing for the mother-bosom of nature, the naturalism much discussed today (but which with us tastes very much of Japan), has prevailed in all ages, and has everywhere been treated with taste; but it has nowhere predominated, because it neither does nor can offer the highest in art! We see it blossom in Egypt already in the epoch of the 6th dynasty; for whoever will consider the well known figure of the squatting scribe (original in the Louvre) from the most modern point of view, will not recognize the highest degree of naturalism? Who will deny to the designer of the frieze of vine leaves on the so-called Sarcophagus of Alexander (Fig. 124) delicate observation of nature?

The Romans knew and used naturalism, as shown, and the Pisani in the Italian middle ages aroused it again, inspired by antique reliefs, -- a feeling for nature awakened by the forms of the antique! Without once adhering to the antique, "truth to nature and soulful expression, even at the cost of beauty and accuracy, without knowledge of anatomy", was won!

These views came and went and gave place to others; men then worked with a knowledge of anatomy; subjectivism was left unlimited, to stand or fall with its creator, since subjectivism only produces subjectivism, whose results in the domain of art cannot be harmonious, but substantially diverse.

It is a strong thing according to our views, that not alone in art, but also in general, and even in our earthly arrangements, where the good and the tried must fall together, to give place to the novel, merely because change is delightful!



The Renaissance could not pursue another course, than others had already done; but perhaps we may see in its circle a spiral, which brought us slightly nearer perfection.

But from these phenomena as well as from what has been said, and every one that has learned drawing will confirm it, we should deduce as a primitive truth, "that it is easier and more convenient to reproduce nature as it is seen, than to first conventionalize it, so that it shall be appropriate for definite purposes and materials", and when von Keppler<sup>55</sup> recently asked the question, whether the art of today, the religious Christian art, could learn from the ancient Egyptian, and he was answered as follows:- "Certainly; for what has chiefly been lost forms the noble past and stamp of the Egyptian: the consciousness that art is not there merely to give pleasure by its play, but to solve high and the highest problems, the self-limitation and the reasonable moderation in the imitation of nature, obedience to the laws of reason, to the natural laws of art, simplicity, and virginialness, feeling for truth, clearness of understanding, combined with depth of soul," to which I gladly subscribe.

*Note 55. Compare Keppler, P. W. von. Wanderfahrten und Wallfahrten im Orient. 3 d edit. p. 84. Freiburg. 1899.*

To the words of our Emperor; "Peoples of Europe, protect your holiest possession from the yellow race", I give a meaning other than purely political. With the most sacred possessions belongs our art also, i.e., the art of European nations! If now the most recent tendencies in the German empire appear with the inspiration of the really still primitive art of dying Japanism, then is an error made, that the "Rococo" has previously made, and which may have serious consequences for us. The beautiful and beneficial forms of the antique and of the Renaissance are easily thrown overboard, and what do we receive in their place? Certainly at first nothing better!<sup>56</sup>

*Note 56. Words to this effect and worthy of consideration have recently been published by Professor C. Schick, Director of the Kunstgewerbeschule (Art Trades School) in Cassel, and likewise by Otto Kaemmel in Leipzig in his Essay; "Burschen heraus"! Grenzboten, no. 22, May 31, 1900.*





## Final Consideration.

## 77. Final Considerations.

If in Chapters 1 to 10 of the preceding, the customary divisions of Protorenaissance, Transition style, Early, and High Renaissance, period of Theorists, Barocco, and Pocco, are retained, it will be evident from the art how this occurs, and that only the phenomena in the domain of architecture are referred to, which indeed are separated by time or space, but are yet borne by a wave, which swells sometimes high, sometimes low, or for a time meets with resistance, that it overflows or destroys with so much the greater force.

An impulse is given; the originally quiet surface becomes animated; it rises into mighty waves, that proudly and majestically sweep along and swallow up all eddies and opposing currents, which continues in harmonious and uniform movement, - the antique culture and art!

Billows and hollows are also to be found in this; the crest is succeeded by the trough of the waves. But they do not spend themselves on the sands; they rise ever again to new force, with their tops rising sometimes higher, sometimes lower. The storms of the migration of the peoples lashed the surges high; but they calmed likewise and gave place to a more quiet passage. The wave crests bring us again, first shyly, then abundantly, the pearls of ancient art; deities unite in gleaming groups; the awakened souls of men, not prostrated by the storm floods, rejoice at the occurrence and controlling them, give them again permanent forms.

Thus the Carlovigian period picks up the fragments again of ancient art, almost annihilated in those storms, cements them together, and where this is no longer possible, creates the missing portions or fashions a new vessel in the spirit of the ancient one. It is followed by other periods with the same tendencies; they create new objects, since the new life and the changed mode of life produce other requirements and present other problems to the artists; but the "eternal", that was rooted in antique art, also exerts the ancient charm upon it, which was never extinguished.

The entire Early Christian art and the art of the Cosmati,



the so-called Protorenaissance, and with it all that we denote under the general name of "Romanesque art", are nothing more than further phases of antique art, crests and hollows of the same waves, but which are driven over not thoroughly cleared ground, and hence they frequently make individual spurts! But the primeval cause is the changed conditions and needs of life, with which every movement must reckon.

In this sense there is no Renaissance; it is nothing more than a stronger wave, another phase of antique art, held back for a period by a counter wave flowing from northern France, but even if this had at first the power to flow to the distant East, yet it was mercilessly overthrown by the ancient stronger waves, and it was thrown back far beyond the place of its origin!

And what did it bring to Italy? The constructive and practical attainment of concentrating the masses on a building, where they had to exert resistance to certain forces, and to be satisfied with weaker masonry between such points of application; it substituted the pointed arch for the complete arch form and introduced again naturalistic ornament, that Egyptians, Greeks, and Romans had already thoroughly tried, but in which they did not go beyond certain ground forms in the architectural details of the ancient world; they followed these step by step.

The foreign architects of the North had not grown out of the inexhaustible power of the antique; they were compelled to transform their acquisitions in accordance with Southern principles, -- "they abandoned the life principle of Northern Gothic, -- the change of the church into a framework of outward-striving forces, pressing for development and resistance; they exchanged this for the feeling of the South for space and mass, which the Italians, taught by them, carried still further."

The horizontal was regarded as vanquished in the North; it continued to predominate in the South, and with it the antique continued in all its ancient rights; it showed itself strongest in the contest from the time of that struggle in the Quattrocento until the present day!

"The antique would live again", as many a beautiful song on





the Renaissance begins, --that was scarcely necessary; it was always alive, and that they were capable of a further development is proved by the Protorenaissance and all Romanesque architecture, satisfactorily by their contest and victory over Northern art, and it only celebrated a highest triumph in the endeavors and results of the Quattrocento and the Cinquecento!

The Romanesque mediaeval style is neither a preliminary step to the Gothic, nor does it form a transition to it; it is rather the architectural expression of one of the greatest contests of that period, that was fought under all conditions and circumstances.

A never suppressed existence of antique art was justified, which also conquered its single strongest opponent, -- the Gothic, -- by its nature, at least on Italian soil, and compelled it to also adapt the principles it had understood to the changed requirements in public and private life, with its inflexible, its eternal expression of form, that did not chill friends into stark rigidity, but rather permitted the freest interpretation; it is this, that may be understood as "Renaissance". It is the recognizing of the antique under changed conditions, but now and nevermore an attempt to revive it or a rebirth!

It always worked with this consciousness and therefore never wandered into desert and purposeless attempts at reconstruction and works of restoration for the monuments of ancient art, nor squandered means or power on such; but it rather drew from them for its uses and was not even shocked at robbing them, where it was possible to lend form and expression to a new problem by the aid of ancient objects.

Nothing betrays any hypocritical tendency in it; everywhere is self-conscious appearance and creation, that recognizes the high degree of its responsibility!

And I agree with Kaemmel<sup>57</sup>, when he says:-- "Thus foreigners in Rome are often irritated by observing that here the mediaeval has recklessly removed or transformed the antique, and the modern period, the mediaeval buildings, according to its own needs and taste; but this rather naive procedure expresses the discovery of an unbroken connection to the past,



whose monuments were not to the Romans something dead or killed, and consequently not as objects of historical consideration or pious preservation. Whatever the middle ages and the modern period have destroyed in Rome, they have always firmly adhered to artistic traditions in their art, and as the Roman imperial period built, especially as they shaped and decorated the internal apartments, that we may see in the churches and particularly in the palaces of the Renaissance well nigh better, than in the remains of antiquity mutilated by it.

*Note 57. Compare Antike und Altchristliches in Rom. Grenzboten, No. 39, p.620; Sept 27, 1900.*

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## B. SECULAR BUILDINGS.

### Introduction.

"--- Its practice (that of architecture) presupposes the largest means of all arts; since it busies many men and brings many advantages, it is also of such importance economically, that sacrifices of time and money made to it are for the good of the entire empire."

Schultheiss, C. Bauten des Kaisers Hadrian. p.13. Hamburg. 1898.

### 76. Description of the Mediaeval City.

Not alone did the emperor and art dilettant Hadrian in ancient Rome act according to this law; the petty rulers of the Quattrocento and Cinquecento in Italy likewise utilized it. Mostly attaining the mastery unjustly or by acts of force, they were compelled to keep thinkers busy about external things and to take care, that the nobles and citizens should forget how they reached their position, so that artists, the learned, and the working classes should be kept quiet by commissions.

To this circumstance, to the love for fame by those who had risen, the world owes so many beautiful and likewise good works of architecture. Architecture in a noble style was favored by the fact, that the nobility in Italy had already from the 11 th century located its chief residences in the cities. If costly houses and palaces were not built everywhere for this reason, they provided for the buildings of mere utility and common design more favorable conditions, than existed anywhere else





in the world at the same time.

On narrow and uninviting alleys, there were placed beside each other in the North during the middle ages gabled houses with projecting stories, where air and light entered the interior in but limited quantity; to the living rooms themselves was given but little height, and the dear light of the sky, a bright and pleasant sunbeam could scarcely find entrance in the street front of a lower story.

A true and faithful picture of mediaeval dwellings in the South is still given us by the Dalmatian city of Trau. There are the like narrow streets as in the North, only they are here bordered by dark gray stone houses with flat roofs, uninhabitable in the interior, with inconceivably little courts, chicken-ladders instead of stairs, little grace and little comfort, --"cursed damp holes in masonry"!

The less the extent of the city, the easier it was held in case of war, and so much was its capacity for defense increased. The knowledge of this fact forced northern Gothic to build tall houses, to plan narrow alleys and little public squares, and the same conditions had the same effect beyond the Alps as well!

"Crooked streets, sharp corners,  
High roofs, twisted stairs,  
Fill with justified pain,  
Every true artist's heart."

Half in earnest, half in jest, may this mocking stanza be parodied, which was printed by the Hanoverian architects in their festal publication in the year 1862. But it was not only the artists' hearts, but in a higher degree the city rulers, who needed to remove these arrangements in order to preserve their personal safety and power from danger and injury.

#### 79. Transformation of the Plans of Streets.

King Ferrante of Naples made (1476) Pope Sixtus IV understand, that he was not master of the city, while narrow streets, bay windows, and street porticos existed.

The larger cities of Italy emulated the Popes in making their narrow and crooked streets broad and straight, and the removal of porches and bay windows!



The larger cities of Italy emulated the Popes in making the narrow and crooked streets broad and straight, and in the removal of porches and bay windows!

Bologna commenced in 1470 with the removal of wooden porches before the massive houses, good examples of which are preserved and are reproduced in Figs. 125, 126. In their place occur vaulted arched passages, though not for the advantage of an oppressor of the freedog of the city!

Alberti likewise recommended to the rulers in a city the removal of porches, because from them resistance to his soldiers was easy. But the same Alberti elsewhere demands for esthetic and practical reasons the crookedness of the streets:—"The city would appear larger, the houses would present themselves in general and alternately to the eye, shade would not be wanting, the wind would be checked, and the defense against enemies would be easier,"-- if straight streets are avoided. He did not succeed with these views, especially since already before the beginning of the Renaissance, the improvement of the streets had been taken up to a great extent, in which preference was given to a straight course. These changes in the arrangement of the streets had as a further result the permanent paving of streets and squares.

"For beauty, prevention of mud and dust," Florence, the leader of fashion, had its Place of the Signoria paved (1351), Venice its Place of S. Marco (1382), Milan (1412) and Bologna (1470), their streets.

Sidewalks of slabs were arranged around churches and public buildings; the Siennese covered their market-place with travertine ashlar (1513); in other places were used marble slabs, bricks set on edge, and river stones (pebbles). The paving of Rome commenced under Nicholas V, where small, hard, cubical blocks were preferred, with which uneven areas, inlets to drains, etc., could be more easily constructed and leveled, than with large stone slabs, with greater resistance to wear, than if bricks were used.

Everywhere is found an endeavor to create great places in the cities, surrounded by airy porticos, frequently with shops behind them. An antique idea is here revived! It must be ac-





accepted as an advance, that the Renaissance made prominent in its architectural programmes and its masters developed and published laws and rules for the new architectural style, that it raised on its banner spaciousness even in houses, according to antique revelations, at least so far as it there concerned the dwellings of the cultured, the wealthy, and the great.

#### 80. Characteristics of Dwellings.

Straight fronts, uniform levels of all rooms in a story, omission of all neck-breaking intermediate steps, the arrangement of regular corridors before the apartments, the avoidance of narrow, angular passages and of the makeshift of winding stairs, were the characteristics of Renaissance residences. Alberti preferred to have all rooms on one floor at the ground level, the stairs to be generally omitted, since they were only of use to complicate and spoil the ground plan. He was the first to establish the principle for the volumetric proportions of the internal rooms, to give numerical ratios for dimensions of length, width, and height.

He required from the architect<sup>58</sup>, that he should not throw himself at the head of everyone, who wished to build. He demanded faith and confidence from those, who asked for his work or his counsel, and a suitable, but not mediocre remuneration therefor. He preferred to be called two or three times, rather than to obtrude himself once! How different today, when architecture has become a business, and the employe is frequently a nervous and hasty man, who knows better!

*Note 58. In De Architettura. Book IX. Chap. 10. Ital. edit.*

Alberti desires to have good superintendents for the construction, who will always have an eye on the workmen during the absence of the architect, to keep his honor pure, so that not all faults, resulting from the carelessness or ignorance of others, may be charged to the architect. If he were set before the problem of carrying on a work, which the designer could not complete on account of its magnitude, or from the brief duration of human life, then should he execute it as the designer wished, and not make something new of it, inspired by envy and impatience. Every violation of that law has



always had as a result, that all buildings not completed by the designer have been spoiled afterwards by completion, and have made a bad ending.

The Pistojesse architect Lafri recalled these words of Alberti to the great Giorgio Vasari on the construction of the dome of the Umlta in Pistoja, when he set aside the model of Vittori, of which Lafri says, that it was "grazioso e bello", and which would have saved the citizens of Pistoja much money and trouble, if it had been retained. Vasari actually spoiled the building in esthetic and structural respects, which destruction threatened after the mistreatment by him, and which could only be preserved by extraordinary means.

*Note 59. Compare the Author's Essay on this dome in Zeits. f. Bauw. 1902. p.14.*

What is said by Alberti refers to works, that could not be completed within the age of a man or somewhat more, or that remained unfinished for other reasons, but whose completion remained an unavoidable necessity, -- and not to sentimental works of restoration or the rebuilding of half destroyed structures of their ancestors. In spite of all love for the antique, there was in that period no greater ruler or more finely cultured counsellor, to commission an architect to restore again a monument in the so-called antique spirit or on the ground of doubtful ruins. They permitted their beautiful inspirations to remain on paper, and neither they nor other persons squandered good money on venturesome things. The knowledge that they had derived from the ancient works was employed in the intellectual and practical ways required by the new life. Not to satisfy caprice and self-conceit, -- for no one could acquire fame by such undertakings, according to the ideas of that time, -- did they desire the ancient ruins to live again; but men still less desired to take away their charm, than to rob them of historical memories.

#### 81. Care of Monuments.

Sometimes the hell of a bath or temple was changed into a Christian church, which had a different purpose; but new buildings in ancient garb were not created from them without purpose or thought; which is indeed not different from that, which





comes from the hands of our modern architects with their mania for building churches, palaces, and castles, under pretence of the "care of monuments".

Only those were usually allowed to fall into ruin, which were no longer to be preserved, and they were then utilized for the purposes of men; others required the preservation of those received from predecessors, but would afford no experiments.

I hold this point of view to be always more sound than that, which proposes to now restrict our much esteemed protection of monuments, in which architects frequently overestimate their powers and underrate the monuments, which have become historical, and at best give their own new creations on unfit places, which all later ages must condemn or ridicule!

The Renaissance masters paid more attention to the hard principle; "Only the living are right", and they did not make again useless things long obsolete in the opinions of those then living, in order to ask themselves after the work was completed: what now? In allied cases, we make "museums" of them, into which the most recent art may fully enter.

## 82. Knowledge and Abilities of Architects; Employers.

Alberti required from architects little or much, just as one may take it: "*De Pittura e le Mathematiche*", i.e., a good knowledge of drawing and of mathematics (by which moreover no differential or integral calculus was to be understood), with these arts, --- painting, drawing and mathematics, -- combined with study and industry, the architect would gain from those later born and would be assured of gratitude, wealth, fame, and work! He says here, that the architect need be neither a lawyer nor an engineer, neither an astrologer, musician, or rhetorician, to explain his plans. He already earlier gives the good advice of Faust to Wagner; "Understanding and good sense express themselves with little art; and if you are in earnest in speaking, is it necessary to hunt for words?"

Filarete, the less distinguished, less learned and self-conscious master, expresses himself more in the style of a man of honor, for he says that the architect should provide in the



best manner everything necessary for the building, as well as reliable workmen, carry on the work with care and as economically as possible, keep clear accounts, make reports and statements on request, make payments punctually, and issue orders to a superintendent concerning the daily work. The qualified architect deserves the highest esteem of the employer, not alone on account of his rarity, but chiefly because he is placed over an affair, dearer to him than to any other.

He compares the building with the human body, since like it, it must first be conceived, when he says; "For the owner confides his ideas to the architect, he adapts and develops them for months, just as the woman does the child; and just as the woman at last brings forth the child, so does he bring forth into the world the idea of the building, even in the shape of a wooden model. The latter is now treated with endless care, just as a new-born infant by its nurse; somewhat later, when a teacher is given to the child, the architect seeks skilful mechanics for his building, naturally, in concurrence with the owner, as its father."

*Note 60. Compare Antonio Averlino Filarete's Traktat über die Baukunst etc. Published for the first time and edited by Heinrich Pettinger p. 66, 67. Vienna. 1890.*

In spite of these fine conditions, Filarete gives to his princely employer in the most courteous and well-meaning way the good counsel, "if he would understand plans, then should he first read some on the subject and then learn to draw", but he should then always be more quiet about this than his colleague Apollodorus, who, when the later emperor Hadrian was present at a conference on building plans between him and Trajan, put him aside with the words: "Go away and paint your pumpkins, for you understand nothing of this."

*Note 61. In the domain of still life painting, which is likewise so common in Pompeian paintings, Hadrian accomplished no little; but Trajan did not favor his love of art. Compare Schultheiss, C. Bauten des Kaisers Hadrian. p.4. Hamburg. 1898.*

## Chapter 11. Palaces.

"The ideal and general problem of civil architecture is less





clearly expressed in royal palaces and public buildings, which have to satisfy their peculiar and different purposes, than in the private palaces, which bear the unity of will and purpose on their faces, and by their similarity are able to form a definite style group."

Burckhardt. Geschichte der Renaissance  
in Italien. § 90. p.167. Stuttgart.  
1878.

### 83. Diversity.

The Italians already at an early date distinguished between palaces, villas, and houses. Filarete subdivides private buildings into residences of the nobility, of the citizens, and of the lowest class; he speaks of the palace of a nobleman, of the residence of the merchant, of the house of the artisan, and outside the city, of the villas of the nobility, the dwellings of the citizens, and of the peasants' houses.

According to the local conditions, the customs and habits of the occupants, special types of palaces and houses were developed, which may be classified as follows, in accordance with the precedent of Burckhardt.

### 84. Florentine-Sienese Type of Palace.

1. The Florentine-Sienese type of palace was the earliest that held the first rank for a long time. It was preceded by the Italian Gothic palace, which had nothing to do with the mountain castle with its usually necessarily irregular ground plan, and whose most important characteristic remains its regular plan. "The unity of the facade and of the ground plan was the mother of all other unity and architectural principles". The generally prevailing form of ground plan is that of the antique house, based on the grouping of the rooms around an open court surrounded by porticos. Entire uniformity dominates the exterior, the means are equally distributed over the whole; there is no especial distinction of the main entrance; all grouping of the masses is scorned; the construction with columns and straight stairways is preferred. The windows of the upper stories continue to be round-arched until the beginning of the 16th century, the stories are marked off by window-sill bands; in the courts, a cornice extends around above the arcades, and



a string-course beneath the windows, while the space between them is ornamented by medallions, coats of arms, etc.

Under the influence of the Tuscan masters is also the palace architecture in Urbino, as well as the palaces in Romagna and in Ferrara. The Bolognese palaces dispensed with the repeated enclosed design lengthwise on account of the continuous street porticos.

#### 85. Venetian Type.

2. The greatest contrast with the former type is made by the Venetian. In it appears a completed Gothic inheritance. In the centre is the loggia, on the right and left of which are separate windows with projecting balconies, which rejected the more severe architecture, for by the recession of the walls of that story was created a safe and secure place for the owner of the residence, when he wished to look out on the occurrences on the street (Compare Palaces Ugucioni, Pandolfini, Pitti, in Florence).

#### 86. Roman Type.

3. A third type is shown by the Roman palaces, where only the belts, string-courses, and the enclosures of windows and doorways are made of dressed stones, which are always very strongly treated and project from a plastered wall or one executed in rough brickwork. Courts with piers and columns (Courts all Romana) are there indicated. But the buildings of the later period are especially to be classed here, that first received its definite development "in a period of stagnant politics, of counter reformation, and of increased elevation of the Spanish style." The immediate architectural result is increased width and height with continued simplification and rudeness of detail, even to brutality. The commencing point is formed by Palace Farnese in Rome. The masters, who devoted themselves to it were; Giulio Romano, Vignola, Vasari, Ammanati, Alessi, Pellegrini, Palladio and others, among whom Alessi longest retained a rich and pure execution in details. The courts no longer have the "refined elegance of the rest among the earlier, but instead of this, an earnest greatness or a spirited magnificence."

Further consequences are some changes of the vestibule and





the introduction of the so-called gallery, an arrangement of a long and narrow hall borrowed from the North, according to Scamozzi's statement. It is derived from the French chateaus, where it was already mentioned before the beginning of the Renaissance in Italy. It was an element of the plan even in the middle ages, and it served in the 14<sup>th</sup> and 15<sup>th</sup> centuries as a gallery for receptions and exercise in the chateaus of the feudal nobles. Froissart even (1388) speaks of the gallery in the Chateau of the Countess of Foix. Somewhat later (1404), a gallery was mentioned in the Chateau of the Good Duke Louis de Bourbon. In the year 1432, the Duke of Bethfort built in Palace des Tournelles a gallery 18 toises long and 2 1/2 toises wide, which was ornamented by mural paintings (green grounds with family coats of arms and weapons). King Rene in 1466 had galleries built in various chateaus (Chateau de Reculee, Chateau de la Ministre, and Chateau de Chanze). One was mentioned in 1440 in Toulouse, and there was said of it; "Ambulacrum, quod nos galeriam vocamus" (Hall, that we call gallery), and Du Cange cites a plan of 1471, on which is; "Galeria sive corredor domus" (Gallery or corridor of the house). During the Renaissance, Marie de Medici brought into fashion monumental galleries and set Futens to decorate them. (The most magnificent galleries are found in the Chateaus of Blois, Chambord, Chenonceau, Fontainebleau, in Palace Luxemburg, the the Gallery of Apollo in the Louvre).

#### 87. Type of Facade with Colossal Order.

4. A last type, that of Late Renaissance, especially favored in all Italian cities, particularly in Rome, Vicenza, Genoa, and Milan, exhibits on the facade a colossal order, i.e., colossal columns or pilasters extending from the base to the main entablature, independently of the number of stories.

5. Certain models precede these typical palace facades of the Italian Renaissance, especially the Tuscan type of the Gothic palace (Fig. 128), a facade design from Siena; Fig. 129, a facade design from Pisa), in addition to which, the influences of the antique theatre facade is not to be denied (Fig. 130, system of the facade of the Colosseum in Rome). The antique and the mediaeval strive here for supremacy, which the antique



eventually retained.

For the Renaissance palaces of Venice, the Gothic palaces of that city served in all their parts as models; their arrangement of windows, the loggia, the balcony, the water portal, -- remain the same, and only the doorways, windows, belts and cornices change their forms and return to antique art. (Figs. 181, 182). On the facades of palaces in Gothic and Renaissance styles, the tectonic skeleton is the same; merely the decoration is different. The pseudoperipteral colonnades of antique monuments (Fig. 1831 *Maison carree* in Nîmes) are reflected in their grandiose effect in the heavy facades of Michelangelo, of Palladio, and of other masters of this epoch.

#### 88. Representatives of the Types.

As chief representatives of the first type, which is still influenced by the Gothic, may be taken Palaces Pitti, Riccardi, Strozzi, and Gondi in Florence, Palaces Merucci, Piccolomini, and Sparnochi (all between 1460 and 1474 and ascribed to Rossellino and di Giorgio) in Siena.

#### 89. Palace Pitti.

Absolute certainty or documentary proof does not exist, that Brunellesco (1377 - 1446) built Palace Pitti, as commonly assumed. Even if the year of its erection is uncertain, for which 1460 is usually given. But according to the opinion of von Fabriczy<sup>62</sup>, in no case should a later date than that given be taken for the construction of the model of the building.

*Note 62. Compare Fabriczy, C. von. Filippo Brunelleschi. His Life and Works. p. 302. Stuttgart. 1892.*

The owner of the Palace was Luca Pitti (born 1392, died 1472), who supported the conspiracy against the Medici in 1466, but abandoned his confederates and so did not share their fate, -- the punishment of banishment. We find Luca shortly before his death again holding the honor of being one of the *Venti di Guerra*, and that after the catastrophe, he built further on his Palace is shown by his acknowledgement of authority of the year 1469, wherein is mentioned "a new house, that I have built and which I still continue to build, likewise for a dwelling for myself and my family."<sup>63</sup> Although his building brought him repeatedly into financial difficulties, yet he died as a rich man.





*Note 63. Compare the same work, p. 323.*

If 1446 was the year of Brunellesco's death, it is then actually true, that the origin of the model of the building cannot be placed later than 1440, for which von Geymuller suggests, that it might possibly be a repetition of one formerly prepared by Brunellesco for the Palace Medici, which the owner declined to accept, as being too large, and which the master threw aside in anger at its rejection. How far the building had proceeded, when Brunellesco died, we do not know; nor have we any knowledge of the original plans, nor of its ground plan or elevation.

Representations on old drawings, engravings,<sup>64</sup> and paintings, afford us information concerning them, particular reference being made to a picture of the city given by Rohault de Fleury<sup>65</sup>, belonging to the year 1473. On it is certainly drawn and named on the correct site a Palace of Luca Pitti with its garden, and which is in three stories with an increased height of the upper story at the centre, in the lower story being 3 doorways beside each other, and containing 5 windows in each of the two upper stories. The representation is rather poor, and nothing more is to be made out of it architecturally, than of the Palazzo of Lorenzo de Medici likewise given on the same drawing, designed in 3 stories with 4 window axes.

*Note 64. Compare also the engraving published by Müntz (Histoire de l'Art pendant la Renaissance en Italie, Vol. 1, p.50); View of Florence at the end of the 15 th century from the original in the Berlin Cabinet of Copperplates.*

*Note 65. In Rohault de Fleury's La Toscane en Moyen Age, etc. Vol. 1. Florentia. Pl. 1. Paris. 1878.*

We merely deduce from the picture of the city in the year 1473 the conviction, that the two Palaces were then of limited extent, compared with that existing today, that they were under roofs, and that Pitti saw his "second house" so far completed at his death, as he desired to build it. This original building was only planned for 7 window axes, so that its facade, designed in 3 stories, consisted of 7 windows in each upper story and the 3 portals and 4 mezzanine windows in the ground story.

A drawing in the Uffizi has been made known by von Geymuller



and Stegmann<sup>66</sup>, that may represent the original sketches of Brunellesco for the Palace of Luca Pitti. Taken quite generally, it may be held to be so; it is conceived in the forms of the Palace as built, being designed with 7 axes and in 3 stories; it has the continuous balcony with columnar balustrade, but not the same proportions. The windows are formed without any subdivision or tracery as simple and large round-arched windows, exceedingly slender in the uppermost story, whose imposts are marked by string-courses. The facade ends with a stone cornice of slight projection and without an attic story.

*Note 66. Geymuller, H. von & C. von Stegmann. Die Architektur der Renaissance in Toscana, nach der Meistern geordnet. etc. p. 63 - 65 of the text. Munich. 1896.*

A similarity of this sketch to the representation of the Palace on the picture of the city is considerable.

In the work mentioned<sup>66</sup>, it is shown that the ancient angles of the original building, with 7 axes extending through the entire height of the 3 stories, may be recognized in the jointing, "but which is interrupted by the bonding of the ash-lars and the voussoirs". This concession, that the continuous angles are interrupted by new bonding ash-lars and voussoirs, is more rather fatal evidence. I have frequently examined the building for this, but could discover no irregularity in the bonding, other than what elsewhere on other window piers is seen toward their centres. Neither does the large and beautiful Plate 13 in the same work show us any such occurrence. Separations or irregular setting between the older and newer portions of the wall, whose setting was about 200 years apart, I have been<sup>67</sup> unable to find.

Canti<sup>67</sup> mentions certain marks on the building itself in favor of its erection with 7 axes. He proves that the central structure has no developed base for the extent of the 7 axes, that for this the ash-lars with bosses first begun at a certain distance from the external ground, and that a base was planned here, as on the other Florentine palaces of this time. The absence of the base is correct; no arrangement exists for the addition of a base, the continuation of the side base





might have just as well been intended. I might rather assume that a base was here originally actually constructed, but that it was removed later, as thought proper. It would be idle to remove a seat along the building, when the Palace of Luca Pitti was elevated to become a princely Palace. Conti remarks thereon, that in all stories of the actual building for the 7 axes, the characteristic iron holders for torches and banners exist, and that they even have rings in the ground story, but that they do not occur on the adjacent portions of the building. This is again true and may be verified on any large photographic view of the building.

*Note 67. See his work, p. 316 - 321.*

*Note 68. Compare Plate 13 of the work mentioned in Note 66.*

On the other hand, it may still be proved, that on a copper engraving in the passage connecting Palace Uffizi and Palace Pitti, "on the picture with the lady", that the building with 7 axes ended with a weak string-course and a low loggia of piers with a strongly projecting cornice with rafters, from which it follows, that the entire upper story was not executed by Brunellesco, or the latter was also merely planned by him, which might well be judged to be correct, especially when Vasari<sup>69</sup> remarks concerning it; "which he commenced for the same nobleman within the city and completed it to the second upper story in such magnitude and splendor ---". "Unless the future teaches us differently, we may now indeed say, that till the beginning of the 17th century, the Palace Pitti existed in 3 stories with 7 axes. The picture of 1473 assumes it to be completed, so that Luca would have lived to see this, as he died in 1472. Seventy seven years later, on Feb. 3, 1549, a great grandson of Luca, Buonacorso di Luca Pitti, sold the Palace to Duke Cosimo I, who acquired it for his wife, Eleonore of Toledo.

*Note 69. Edition by Schorn. Vol. 1. p. 210. Stuttgart and Tübingen. 1837.*

The monument now experienced extensions and alterations on both the interior and on the exterior. Its great arched doorways were removed from the ground story, these being limited to a single one at the centre; they were filled by great rect-



rectangular windows, which received pediment caps, the sills were supported by consoles, and lions' heads were placed in the balustrades. These alterations were carried out by Ammanati (1569) with reference to the changed uses of the rooms in the ground story.

Ammanati, who died in 1592, built also the great court (1558 - 70), of which Grandjean de Montigny and Famin say, that its columns offend good taste, sound sense and the purpose of the column, whereby the desired effect was not attained, as by the rustication on the exterior. It is not to be denied, that when Ammanati transferred the rustication to the shafts of the columns, he did not have a peculiarly happy conception; he must say to himself, that he could not compete in the design of an open court with the effect of the street facade. The courts of Palace Riccardi and of Palace Strozzi are more fortunately and better conceived, since they do not attempt to recall the external architecture or the street facade, and the master sought no connecting point between them.

The drums of the columns of the Tuscan order, coursed in the form of cheeses on each other, do not produce the impression of strength; but they appear more graceful than those of the Ionic order placed above them, where the shafts of the columns seem to be concealed by a number of rectangular slabs, and the Corinthian, where smooth drums alternate with those swelled to pattern. The desired graduation from the sturdy through the graceful to the rich is not attained. Antique models (for example on the Gate Porta Maggiore in Rome or the Amphitheatre in Verona), are already better. Likewise the rusticated frame-like enclosures of the wall panels between the columns are not a happy addition, for they make the entire architecture unquiet.

But Ammanati also built the wonderful ending of the court on the garden side, the grotto with the semicircular stairway and the fountain above it, to him should be ascribed the main cornice represented on the already mentioned "Picture with the Lady", if it was indeed actually constructed, and it does not represent a provisional structure, like that on the portico of Chapel Pazzi (Fig. 134), but which as executed, no one would take for





"a low loggia with piers and a projecting cornice with rafters"!

The design of the garden adjoining the court and connected therewith is the creation of Tribolo, which was carried further by Buontalenti and Giovanni da Bologna. After 1620, 3 windows were added at each side of the central building, and the two-story portico of the principal facade was begun by Giulio Parigi, nephew of Ammanati, and completed by his son Alfonso.

The projecting wings with the arcades belong to a still later period; the left (of the observer) one was executed in 1764 by Francis I, the right one in 1788 for Pietro Leopoldo by Ruggieri, but the latter was only finished by Pasquale Poccianti in 1822.

In 1640, the central building had deviated about  $1/3$  braccio from the perpendicular in consequence of many repairs in the interior, but it was brought true again by means of anchors by Alfonso Parigi.

What astonishes us today is not the originally conceived design in stone, but rather the happily joined parts of the building, that have arisen in the course of 400 years, but appear as a single inspiration, as if an originally so designed whole of majestic grandeur and effect! "Men ask themselves, what one of the world-disdaining gigantic men, furnished with such means, could go so far out of the way of all mere beauty and pleasure?", cried Burckhardt<sup>70</sup>, and the answer thereto may be read in the text of the work mentioned in Note 66; "Princes and architects deserve the eternal gratitude of later ages, that they always continued to build in Brunellesco's forms", -- at least so far as concerns the principal facade, and every new stairway built at the entrance of a garden religiously adheres to the style of Brunellesco in its forms. This is the sole and the best care of monuments, the only true protection of monuments in the spirit of Alberti, which has been applied to a work of such high importance. No owner and no architect desired here to supplant each other; all later men subordinated themselves to the great spirit of the first creator of the nucleus of the building, and thus created a work, which appears like a homogeneous structure, -- a monumentally expressed warning to us moderns!



*Note 121. Compare Burckhardt's Cicerone, p.308. 7 th edit. Leipzig. 1898.*

The upper sketch on the adjacent Plate depicts the story of the origin of the monument in a visible way, and it shows clearly and within limits, what is original and what are additions. The main facade exhibits the archaic principle of the diminution of masses upwards, attempted by a slight recession of the different stories, and by the graduated expression in the ashlar work. The building is characterized by stories of approximately equal height (ground story 38.9 ft., second story 38.1 ft., and third story 38.8 ft.) , with a height of the building to the top of the attic amounting to 116 ft. by strong courses 3.15 ft. high, with equal windows 24.6 ft. and 24.4 ft. high with a width of 12.13 ft. wide, arches of equal depth, window piers of equal width, and by the absence of all ornament in each story.

But one question yet remains open; what was the original form of the window openings? Did the open window areas, measuring over 300 sq. ft. each, remain undivided as in the small sketch design, or as in other Florentine palaces, were not stone columns and arches or stone mullions and transoms inserted in them, in order to make it easire to close them? What now exists, the inserted masonry with a door opening on the balcony, over this being a window in 4 divisions and a circular opening above that, these are additions in the period in which stucco-workers and painters decorated the public apartments, when Pietro da Cortona (1596 - 1669) was employed on the building.

3 Lunettes, side compartments, and vaults of the ceiling, commence above the windows with mullions and transoms, likewise rectangular inside. In the Sala di Marte, the round-arched window is rejected in the ornamentation; where it disturbs this, it is walled-up again, or as in the Sala di Giove, it is transformed into an oval shape. This position of the window openings within the great arches of the facade is a contradiction, like the arrangement and form of the magnificent ceilings to the architectural work.

We now find in all the window gables of the second and third





stories, both in the older as well as the later parts of the principal facade, pilasters arranged with peculiar capitals, that bear the beginning blocks of an architrave, above which rises a plain arch soffit. This arrangement is entirely overlooked in the publication of this Palace by Grandjean de Montigny & Famin<sup>1</sup>, while it of course appears on a photogravure by Raschdorff<sup>2</sup>, but the text does not refer to it in any manner. (The dimensions of the windows are there given as  $21.2 \times 15.5$  ft., while they are actually  $24.5 \times 12.15$  ft., and if it be added from Featentacner, that the ashlar have a length of 27.8 ft., this refers to a single one of those in the ground story on the left of the higher central building, and when it is further considered, that the bosses are so large, that one can find shelter from rain beneath them, this is in the most extreme case to be understood of the terrac below them, which is of later date and actually projects 3.28 ft. and more; one cannot get beneath them, since they extend down to the ground.

*Note 71. Raschdorff. J. C. Palastarchitektur von Oberitalien und Toscana. Berlin. 1888.*

But in the work on Tuscany mentioned in Note 66, these jamb pilasters are represented on Plate 13 a, and it is stated in the text (p.65), that "the pilasters in the jambs of the windows exhibit capitals of a form apparently pretty early". Several bosses also bear stone-cutters' marks, as I stated for Palace Riccardi (see Art. 32). Fig. 135 gives this form on the windows after my own drawing, and I add two others, one of a capital in S. Croce, the other of one from one of the cloisters of S. Maria Novella, whose details recall the capitals of the Pitti pilasters, -- therefore they are of Gothic origin!

Hauser gives expression in his "Baustillehre" to the view, that the window spaces were formerly fitted with stone-work, like the other palaces of this period in Florence and Siena, an idea that cannot be absolutely rejected. Were this the case, then must a treatment as on Palace Rucellai be assumed, since the beginnings of an architrave exist above the pilaster capitals, or as on Palace Piccolomini in Siena, or on that of the same name in Pienza. Moreover a division into three parts by perforated slabs above the architrave according to



Fig. 136 is not excluded.

The original interior exists no longer and could scarcely be compared with that presented to us today. The "ambitious" Pitti could not show what the Grand Duke of Tuscany collected here from 1550, when he fixed his residence in Palace Pitti, until now, when the gardens and parks have increased and there exists the finest conceivable growth of trees.

The ornamentation of the walls and ceilings, the unusually broad architraves of the doorways, of the most costly kinds of marble, the incomparable pictorial decorations, the good arrangement of the rooms, the abundance of gold and silver articles, the cups of gold and enamel, the precious faience and porcelian, -- all harmonizes in the noblest manner, and we remain entranced by the charm of the combined truly monumental and the refined minor art works. A Sunday morning in the Argentario, the treasury of the Palace and of the House of the Medici, is a divine service in the Temple of Art, so full of consecration, so elevating and blessed for those in the present age of the "youthful tensity", who have not lost all more delicate feeling. After a tour in the Palace, under the reaction from what has been seen, whoever for a few minutes takes a place at the wide table in the festal hall and looks beyond Armanati's court to the grotto with the white marble fountain, whose waters gleam in the sun like crystal and silver, and also towards the great lawn enclosed architecturally by rows of seats, shaded by towering ancient evergreen oaks and cypresses, broken by brightly colored flower beds, above which stretches the deep blue vault of the heavens, -- he learns to recognize the men of the Renaissance, to understand and to envy their lofty culture, to restore and combine their feeling for the eternal beauty and art into it!

#### 90. Palace Medici-Riccardi.

Not so mighty in impression or of such great dimensions is Palace Medici-Riccardi, built by Michelozzo (1396-1472) for Cosimo the Elder (1480), while was originally only designed to be half as large, but was considerably enlarged in 1714. The staircase of honor was by Battista Foggini. the building passed to the Riccardi by sale in 1659.





What now exists no longer coincides with what the master originally intended. The Palace is represented in the picture of the city previously mentioned<sup>72</sup> as a building in 3 stories with 4 axes on the facade, a bench-like base and two large toruses in the ground story, coupled round-arched windows in the second and third stories, ending with a bold entablature with modillions, adjoining an enclosed garden, not far from S. Lorenzo.

*Note 72. Compare Rohault de Fleury. Vol. 1.*

141 The system of the facade (Fig. 137) is as simple, definite, and clearly expressed as that of Palace Pitti; regularity in the arrangement of the windows, intended more for the effect of the surfaces, than for their subdivision, separation of the stories by window-sill belts, the crowning entablature, are designed with reference to the entire height of the facade. What is merely indicated on Palace Pitti is here carried out with assured security: the graduation of the rustication in the stories from heavy to refined. The ashlar are not all of equal height in the same story, the jointing is not everywhere above criticism; the antique-Roman principal entablature is too large and too heavy in design.

Wrought iron holders for banners and torches with rings, transferred from Gothic, but executed in the forms of the new style, exist on all the stories. The angles of the building are in the middle story decorated by the massive stone shield of arms of the Medici, suspended from a volute bracket by loops of ribbons; wrought iron lanterns project on the ground story, an arrangement likewise taken from Gothic (Compare in Chap. 14, under o; Palace Vitelleschi in Corneto). The columnar court is beautiful with its Composite capitals, coupled windows in the ground story, and the open loggia with horizontal roof. The archivolts are banded in the antique manner, in which mouldings in late Roman style reappear below, as on Palace of Diocletian in Spalato. The arches rest directly on the capitals; an architrave extends above them, leaving between them and the window-sill belt a high frieze, which is adorned by medallions and large garlands of fruits executed in sgraffito. The wall surfaces of the middle story are subdivided into ashlar in



sgraffito and it ends at top in a palmetto frieze.

In spite of its enlargement, the building has remained the residence of a nobleman and has never risen to the rank of a palace, like Palace Pitti.

The beautiful palace chapel in the interior is notable for the precious frescoes of Luca Giordano (1683).

142. 91. Palace Strozzi.

The last word in the style of Tuscan palace architecture is spoken by the masters of the Palace built in 1489 for Filippo Strozzi, the famous opponent of the Medici; Benedetto da Majano (d.1497) and Simone Pollajuolo, called Il Cronaca (d.1508).

Drawings in the Uffizi and the still existing model of the building, show that in this case, the building was erected on the whole just as it was planned; but the owner did not succeed in making it detached on all sides. It is designed and built in 3 stories, with 9 axes on the narrow side and 13 axes on the longer side, the ground story has the characteristic base bench, contains the great entrance doorway and small rectangular windows; the two upper stories each have 9 or 13 coupled windows with round arches, and they are separated from each other by window-sill belts, with but slightly graduated rusticated masonry of courses of unequal height, wrought to a fixed pattern, with heavy excentric bearing arches over the windows (deeper at the crown), ending with a heavy round (replacing the antique architrave), above which is a plain frieze and then the antique Roman main cornice with modillions, egg-and-dart moulding and dentil band, designed in the most elegant way in its height and its projection and proportioned to the entire height of the building.

The corner stone was laid on July 16, 1489; after the death of Filippo (1491) and of its first architect (1497), the work was carried on by the sons and by master Cronaca, but was only completed 25 years (1533) after his death.

The window piers are adorned by the characteristic wrought iron holders for torches and banners with rings, the angles have iron lanterns by Nicolo Grosso, called Caparra, and over those are large consoles with robbons for the stone coat of arms of the family.





The dimensions do not equal those of Palace Pitti, but exceed those of Palace Riccardi, where the distance from one window-sill belt to another is only 22.9 ft., while it reaches 30.7 ft. on Palace Strozzi, one thus exceeding the other by 7.78 ft. The largest room in the Palace does not exceed an area of 26.8 x 53.3 ft. The porticos of the court have unequal widths of 14.1 and 25.9 ft.!

Burchhardt calls this proud building: "the noblest and highest form, that a stone house may attain without connecting or continuous members, by mere contrast in the treatment of surfaces", .. what every professional may well believe!

In the work mentioned in Note 66, on photogravure plate 2, Benedetto da Majano is given as master of the work in accordance with the former acceptation; Benedetto is likewise mentioned as master in the latest edition of the "Cicerone". But in the biography of Giuliano da Sangallo (1445-1516), (compare p. 12 of the text of the work mentioned), he is designated as the designer of the building, on the ground of information from the wooden model of the building and of the building accounts published by Jodoco Del Badia. According to these, old foundations were removed from the excavations for the building in August, 1489, and the new walls were commenced in 1490, from which time forward Cronaca was employed on the building; Giuliano da Sangallo received for his first general model in wood, between September 19, 1489, and the ensuing February 6, 115 lire and 10 soldi in three payments "per sua manifattura e parte diligenzame messo in fare el modello del deficio della chasa".

*Note 73. See Raccolta etc. di Jodoco Del Badia. Florence . 1886-7. (See text of note in Italian).*

A view of the "primo modello di legno" was reproduced by photography on Plate 15 of the work mentioned, and we see from it, that the present design in 3 stories with 9 and 13 windows, with the entrance doorway and the rectangular mezzanine windows, the coupled round-arched windows with columns and excentric discharging arches, as well as the antique-like cornice with modillions, all belong to the original design. But on the ground story of the model are placed rusticated ashlar with



bosses rounded to a pattern, as on Palace Condi; on the next story is placed a kind of diamond-paneled ashlar (frustums of pyramids or wide beveled edges), and the ashlar of the third story are dressed smooth; the astragal is suppressed; the modillions of the main cornice are stilted, of simple form, and are set close together, but it must be said moreover, that it is well proportioned in height and projection to the entire building. Dentils are not omitted on the main cornice or on the belt-courses. A graduation in expression was the purpose of the architect in the treatment of the ashlar in the various stories, even on the first model, as well as in the execution, though a somewhat different one.

According to the statement of Del Badia, the building was so far advanced, that in July, 1500, the modillions of the principal entablature were set on the half next Palace Mercato Vecchio, and this part was completed on September 15, of the same year.

Gronaca died in 1508 and Giuliano in 1516; consequently the first architect was survived about 8 years by his successor, the constructor of the much admired principia entablature.

The problem proposed was to place a stone main entablature projecting 7.26 ft. upon a wall 3.61 ft. thick, increased to 4.79 by corbelling. It was solved by treating the modillions as actual beams 9.38 ft. long, 2.03 ft. wide 1.475 high, which project 5.77 ft. from the solid face and are supported for 2.62 ft. by the bearing members (cyma, dentil band, and egg-and-dart moulding), so that strictly taken, they can be regarded as only projecting free for 3.61 ft. These stone bear consoles lie 4.94 ft. apart from centre to centre, and they are bonded with hooked anchor stones flush with the inner side of the corbelled masonry, and they there support a loading wall 4.59 ft. thick and 7.54 ft. high to the stepped top. But this loading wall further receives the load of the shed roof, which slopes downward toward the rear and is about 26.2 ft. span. Hence the stresses and loading are therefore abundantly provided for. These are opposed by the hollowed-cut coffer slabs, 0.72 ft. thick, the ornamental mouldings of the planchier, 0.394 ft. thick, and the cymatium, consisting of blocks 1.345 ft. high





and 2.46 ft. deep, also hollowed-out. Including the crowning ornamental mouldings, filling slabs 0.75 ft. thick extend between the consoles. Between the coffered filling slabs, omitting the consoles but resting thereon, there are inserted headers 1.31 ft. wide, 1.15 ft. high, and 4.92 ft. long, and again upon these are laid others 1.68 ft. wide, 1.34 ft. high, and 5.90 ft. long, into which the intervening pieces are dovetailed. The headers between the coffers are cut out to receive the crowning members of the cornice.

The load transmitted to the consoles, which is opposed by their strength and by the loading masonry, is therefore not great. The lowest projecting member of the main cornice, the bead and astragal, is held by anchor stones 3.80 ft. high; it is of slab form, rests 3.28 ft. on the masonry and projects only 0.66 ft. beyond it. It was then unnecessary to insert its rear end in a hooked ashlar. Beside three blocks 2.46 ft. thick and set on each other, cut out on two sides, are set two ashlar above each other, cut out on one side, and which grip the former. Every console is enclosed and held by this masonry of stone cramps (Fig. 138). The cornice would indeed have been held in place without this clamping; for the requirements for the goodness of the construction consist in the use of long, built-in, stone beam consoles with the considerable masonry loading and the hollowed-out construction of the projecting parts of the cornice. Only necessary was the insertion of the stone beam consoles into the recessed heavy anchor stones.

*Note 74. Von Stegmann and von Geymüller, in the work frequently mentioned, have for the first time fully illustrated the construction on an assured basis, but the material is made distinct and clear in neither the text nor the illustrations. The text and figures also contradict each other in some points (compare p. 7 of the text and Plate 16, where certainly the section of the cornice must be completed, and where it may also be stated, that on Palace Strozzi, we do not have to do with masonry entirely composed of ashlar in courses.*

*Otherwise we fully admit, that the various publications on the construction of this cornice from German and French points of view are in part entirely defective or show certain errors;*



but when one sits in a glass house, one should not throw stones! -- Warth has worked out this material very clearly in *"Allgemeine Baukonstruktionslehre"* by G.A.Greymann, Vol. 1. p.94, Fig. 277. 6th edit. Leipzig. 1896, even if so far as it relates to the cymatium and its supporting members, this does not entirely agree with the text of p. 7 of the work referred to.

The system of the facade of the Palace is illustrated by the scheme in Fig. 139.

The columnar court by Cronaca (6 × 4 columns, the angle columns doubled in number) shows on the upper story on the two narrower sides an arrangement of piers connected by round arches, on the longer sides being blind arcades with inserted rectangular windows, over which are circular medallions in the tympanums of the arches, while horizontally roofed loggias are arranged on the two narrower sides in the highest story, their entablatures resting on stone columns of the Corinthian order. The visible framework of the roof forms the ceiling of the loggias.

The Composite capitals of the ground story have the Late Roman impost block inserted between the capital and the impost of the arch; the archivolts are subdivided in the antique manner; the crowns of the arches support flat keystones with foliage. Above the arches extend in regular antique form architrave, frieze, and cornice, and above these is arranged a special parapet to the height of the window sill, thus being an innovation in opposition to the window-sill belt elsewhere employed.

## 92. Palace Gondi.

Beautifully graduated ashlar work is shown by Palace Gondi, also built by Giuliano da Sangallo for the rich merchant Giuliano Gondi, which was begun in 1481 or 1490, but only completed by Poggi in 1874, though not in its original extent. Built in 3 stories with 15.74 ft. distance between axes, the middle story is 27.50 ft. high, ending in a heavy stone cantilever belt with dentils, the rustication of the lower story exhibits a treatment similar to that designed by Sangallo on his model for Palace Strozzi with the use of courses of unequal height, while on the middle story the surfaces of the ashlar are finely pointed and are separated from each other by rectangular





<sup>20m6</sup> grooves. they are likewise set and wrought smooth in the top story, but with fine joints and without especial emphasis thereon. (Fig. 140). <sup>235</sup>

The moulded architraves of the windows are wide, the bearing arches between them are stepped, varying from those on Palace Pitti, Palace Riccardi, and Palace Strozzi, in order to make possible better fitting and better bonding with the horizontal ashlar courses. This led Giuliano to the little whim of inserting shield-shaped blocks with inclined joints between the arches (Fig. 140), in the centre of which project iron pins, whose purpose is unknown to me. When courses of unequal height were once adopted, a simpler arrangement might well be made for the joining of the straight courses with the voussours of the arches. In reference to proper stone-cutting, the stepped arches are to be termed an advance, but which is in this kind no invention of Giuliano.

The stories are separated by window-sill belts with dentils on the upper one and small consoles on the middle story; the main entablature is  $1/24$  part of the height of the building, but is too low and is not proportioned for the entire height of the building. <sup>75</sup>

<sup>108</sup> Note 75. Raschdorff gives in his work the height of the entablature as  $1/17$  of the height of the building, according to redtenbacher, but draws it correctly at  $1/24$  on Plate 80 of the same work, as von Stegmann and von Geymuller likewise do on Plate 8 (Giuliano da Sangallo) of their great work. The latter also gives in the third story the stone window mullions, transoms, and stone slabs in the tympanums, also with the crest, a bent arm holding a knife in the fist, -- in the spandrels of the arches.

The columnar court is beautiful, with the staircase built in between the columns and open at the sides, a richly ornamented stone balustrade, decorated ends of the steps, and the small fountain. Its Corinthian capitals support the late Roman impost blocks, on which rest the arches; the crowns of the arches are adorned by a volute leaf fixed before each as a keystone. The state fireplace in the interior of the time of the erection should be mentioned.



1898. Palace Guadigni.

A peculiar position among the palaces of the Early Renaissance is occupied by Palace Guadigni, for on it the fortress-like massiveness and rustication of the external walls do not appear. Not as an insolent fortress, but serene and pleasing does it appear to us, and only the ground story recalls a weak reflection of the former. The city residence of the free citizen, who has attained quiet, is here expressed to us.

Originally built for the silk merchant and manufacturer Rinieri di Bernardo di Domenico Dei in the years 1500-6, it has borne the well known name of Guadigni only since 1684. The family of Dei possessed a chapel in S. Spirito, located on the same Place, and since Cronaca was then employed in the building of this church, the connection of his name with the Palace may well be admitted, and Cronaca may be accepted as the architect thereof, although no document has been produced, which names him as such. <sup>16-179</sup>

*Note 76. Burckhardt, Lübke, von Geymüller and Stegmann, strongly adhere to Cronaca as architect, after Fantozzi (Nova Guida di Firenze, 1844), and so long as nothing more definite can be presented for this assumption, we must also accept it with pleasure.*

"gran stau"

The Palace is built of Pietra bigia, has 3 stories with an open loggia above them, on the side next the Place being 7 axes with a height of story of 18.63 ft. from one window sill belt to another one, and it is crowned and protected by a cornice on rafters and projecting 7.54 ft. It shows a ground story of ashlar with high placed, rectangular windows and a great doorway on the central axis, bordered by a series of ashlar at its sides. The ashlar are coursed in blocks of unequal length and height. All have the finely dressed border of 3-8 to 5-8 inch in width, and a very regularly and finely pointed panel. A stumpy belt-course without the usual dentils terminates the story, which is repeated in the upper stories in the same style and mouldings. The round-arched windows are flanked by a series of ashlar, whose width is 1-3 the clear span, and these follow the form of the arch, becoming wider at top, there ending in a recurved point. The wall surfaces between the win-





windows and the belts are plastered, and the plaster is ornamented by sgraffito, so that wide friezes of fruits and palm-leaves extend beneath the window-sill belts, while the other surfaces are subdivided into ashlar and only receive as an ornament a rosette in the centre of each window pier. The vertical series of ashlar at the angles are graduated upwards in width and in expression; the same is the case with those enclosing the windows. Everywhere prevails uniform and refined feeling in both general forms and details: attention is paid to the sense that requires the graduation of architectural forms upwards. (Compare Fig. 141, especially for the system of the facade).

The ground story is ornamented by the typical rings, on the angles are the wrought iron lanterns of Caparra, like those on Palace Strozzi, and on the piers in the middle and upper stories are the well known banner holders. On the upper story, the great stone shield of arms of the owner of the Palace is suspended from consoles with ribbon bands. Especially distinguished are here the angles of the vertical series of ashlar, for they are decorated between the stories by slender half-columns. The ending of the column on the angle pier of the loggia is correctly given by Raschdorff (Plate 52 of his work), but not by von Geymüller and von Stegmann (Plate 2 of their work, Cronaca).

The usual bench base extends along the two street facades; the stone columns of the loggia have Doric-like capitals with foliage on the angles; the architrave resting thereon, on which is set the entablature with rafters, is of wood like that.

#### 131 94. Sienese Palaces.

In this class of the palaces of the early style, in which a subdivision of the facade is renounced, may also be named the half Gothic Palace Nerucci in Siena, Palace del Refugio there; and further Palace Piccolomini and Palace Spannocchi, which accord in arrangement with the Florentine examples described.

On Palace Piccolomini, the peculiarity is to be mentioned, that it shows simple rectangular window openings in the frieze between the astragal and the antique cornice with consoles.

Palace Spannocchi is built of tufa ashlar (indeed by Francesco di Giorgio, 1436-1502), and the cornice rests directly on



the uppermost story without any preparatory members, but is as a whole proportioned to the height of the building. On an egg-and-dart moulding rest the tall modillions, whose interspaces are ornamented by strongly projecting medallion heads of terra cotta. A geison with decorated fascia and a cymatium finish this interesting main cornice. ✓ 10.

95. Palace Riccardi. *Rucellai.*

*anal.* Hand in hand with the plain Florentine-Sienese palaces, that are only effective by sound alternative relations between openings and masses, by a peculiar treatment of the plain stone wall surfaces, and by their fine ending at top, proceed those, which stand in the antique Roman art; the buildings of Alberti and of Rossellino.

They have nothing of the dignity and earnestness of the works of a Brunellesco, Michelozzo, or Cronaca; before Alberti soared as an ideal on a chief principle of the later Renaissance, -- the graduation upwards of the orders of pilasters and of columns on the facades, which he first brought into effect on Palace Rucellai.

The members there have a refinement in relief like that of Bramante; the pilasters project but slightly from the surface of the facade: there is no graduation of the surface masonry; this is uniformly executed in all the stories in irregular courses of unequal height. The individual ashlar panels are separated from each other by sunk joints of slight depth, the ashlars of which the pilasters are constructed have dressed margins with finely pointed panels.

In my opinion, there is also here no rustication; with this pattern, smooth and uniform accenting of the surfaces, I cannot agree that the local mode of expression is here a connection of rustication with pilasters. What is here intended, also occurs on Roman buildings, without the smooth ashlars separated by grooves being baptized "rustication". Alberti bases his graduation of the facade on the orders, which he employs entirely in the antique sense; lowest the strong Doric, then omitting the Ionic, he uses the richer Corinthian in the two upper stories and a main entablature, which is a mean between that intended merely for the uppermost story, and one designed for the entire height.





height of the building. The entablatures and pilasters indeed have no function; they are not structurally required; they merely contribute a slight ornamentation; and in this sense is the motive of the subdivision of the facade enduring.

The belt courses are arranged like those of the Gothic Palace; the larger extend across as window-sill courses, under them being a flat ornamented frieze, beneath this being the finely moulded architrave. This arrangement repeats itself in each story, and pilasters are placed between the belts. The capitals of the Tuscan order are still somewhat awkward and confused, and those of the Corinthian likewise, and the consoles of the main entablature, as well as the architrave beneath it are, -- well, coarse. The windows are divided by small columns, to which corresponding pilasters are on the jambs; above is an architrave, on which commences the great round arch and the small arches of the semicircular windows. The arches are drawn concentrically, the now partly walled-up semicircle and the circle in the tympanum were earlier open, as the two extreme windows on the right show. The entire facade of the Palace would make a different impression, if these walled-up places were removed, which make it appear heavy and flat, since the intended proportion between openings and solid masses is wanting, -- equilibrium in the effect of contrasts is destroyed, just as at this time on Palace Pitti, among others.

The demand for the security of the occupants still makes itself felt in this building of more elegant type, for here as on Palace Guadagni, only small and high placed rectangular windows animate the wall surfaces of the ground story. The arrangement of the pilasters rises from the bench-base, which is not suppressed here, on a plinth, whose surface is constructed in the manner of opus reticulatum and subdivided by pedestals corresponding to the pilasters. The iron banner holders and the hooks for window shutters at the height of the impost are present in the upper stories, as well as the /50 stone coat of arms with its waving bands, supported from a console, but they are not here on the angles of the building, but are placed beneath the architrave of the middle story on



the axis of a window. The system of the facade of the Palace is given in Fig. 142.

Like that last mentioned, this Palace was also called into existence by a merchant, descended from a prominent family of dyers, who combined culture with wealth, and according to Del Badia, it was built in the time from 1446 to 1451, as taken from the tax registers. It is ascribed to Alberti and to Rossellino.

A contemporary of Vasari names Bernardo Rossellino as the maker of the model; others desire to attribute to Rossellino the main entablature, the mouldings, and the ornamental details, leaving only an influence on the facade as due to Alberti. One might well reject Alberti (1404 - 71) on account of the Tuscan pilaster capitals and on account of the main entablature, if the Palace in Pienza were not incontestably built by Rossellino 12 years later. According to this work, I hold firmly that Alberti was the master for Palace Rucellai, even if the columns with arches in the court are <sup>indeed</sup> ascribed to that master.

The former ground plan is no longer to be recognized; but so much may be seen, that the Palace must have been extended <sup>by</sup> about 4 axes.

#### 96. Palace Piccolomini in Pienza.

A contemporary of Alberti, the Florentine Bernardo Rossellini (1409-63), who became well known as architect and sculptor, and who with his brothers carried on the business of stone-cutting and building, built in the years 1460-62 (others prefer 1459-63) the Palace Piccolomini in Pienza on the same system, as Alberti used 12 years earlier on Palace Rucellai in Florence.

The facade in Pienza might be termed a plagiarism, if the origin of the two palaces were entirely certain; but since the masters Alberti and Rossellino are named as originators of both, the reproach cannot be maintained.

The arrangement of the base, of pilasters, of cornices, and of windows, is the same at Pienza as in Florence; excepting that in Florence a greater surface of the wall is left between the crowns of the arches and the bottom of the architrave of





the entablature, which there contributes very much to make the facade appear more distinguished.

The treatment of the facade surface is the same in both places, ~~the~~ ashlar with rectangular sunken joints, ~~the~~; the widths of the pilasters diminish harmoniously in the three stories; but in Florence, the surfaces of all three orders are uniformly made smooth, while in Pienza, the ashlar of the Doric pilasters have the sunken joints like the stones of the adjoining surface of the wall, and only those of the Corinthian are dressed smooth.

The friezes of the entablatures are low and plain; the main entablature with its high architrave, low frieze and modillions, very heavy ~~garrison~~ and relatively large cyma, is too heavy for the pilasters under the upper story and too low for the entire height of the building. The lack of wall above the windows, ~~where~~ the crown of the arch directly adjoins the architrave, strikes the eye in a very offensive way. Nothing is here to be found of the ~~grand~~ movement of the Florentine architecture and of its refined details of the window enclosures, or of the beautiful belt courses beneath them.

The Doric capitals lack the echinus and the Corinthian are made too low with very knobby details. The horizontal transoms in the windows are without mouldings; the upper ones rest on the imposts, or rather the centre of the arch, and they thus mar the effect of the circular form of the large and small arches.

If the building in Pienza were 12 years earlier than those in Florence, ~~I~~ <sup>we</sup> should then be surprised by it; but since the contrary is the case, it is difficult ~~for me~~ to be so. I hold it to be rather an unskilful imitation, <sup>than</sup> a development of its predecessor; and if ~~I~~ <sup>we</sup> accept Rossellino as the master of the Florentine building, then the man forgot later what he knew earlier. I rate other buildings of the master, and especially the Cathedral, among them, no higher than <sup>these</sup> ~~these~~ palaces, <sup>which</sup> exhibit no greater skill, but rather an impure groping, seeking, or a venturing upon something to which the master had not attained. And if Pope Pius esteemed the architect so greatly as to pardon his exceeding the estimated cost of the



building by 8000 to 12000 scudi in 50000, and "awarded him the first place among all architects of the century." had the man paid his entire salary and 190 golden guildens in addition, and moreover gave him a festal garment, ++ then is the work thereby made no more beautiful or better, than it is. Praise does not beautify, even if it comes from a high source, just as little as an art work is lessened in value by the blame of the ignorant, as already stated by the emperor Marcus Aurelius.

4+

#### 97. Other Facades with Pilasters and Columns.

Palace Piccolomini in Pienza ever remains a weak imitation of the distinguished Palace Rucellai in Florence! The uniform subdivision of the facade surfaces in all stories by pilasters follows in the High Renaissance the subdivision by half and quarter columns, where that by pilasters still remains, but mostly in strong relief.

The cities of Upper Italy make increased use of this, especially Venice, which in the facade of its Library of S. Mark employs the antique Roman theatre facade without substantial change (Fig. 143). But in very many cases, considering an arrangement of Alberti, to extend the pilasters through the ground story, this is rather treated as a plain ashlar surface, while the pilasters or columns only commence in the story next above it. (Compare Palace Uguccioni in Florence, Palace Canossa in Verona, Palace Mancini in Cortona, Palace Trissino in Vicenza, etc.).

The motive is enhanced by coupling the vertical members, two columns or pilasters being placed close together to decorate the pier between the windows, which then presumes a greater distance between axes.

Palace Uguccioni in Florence, built by Marotto di Zanobi-Pol-si, may again be cited as the most important example of this new arrangement, and with this the likewise mentioned palaces of the masters Sanmicheli and Palladio, Palace Canossa in Verona and Palace Trissino in Vicenza (Figs. 144, 145), where it must be emphasized, that in the two palaces last named, the pilasters are set on pedestals, and that the continuation of the cap of the pedestal forms the window-sill-course.

Here occurs a new accenting of the horizontals in the facade





by the use of belts between the stories at the height of the floor beams, which must serve as the necessary base for the pedestals. On this frequently follows the special development of the window parapet according to antique models.

If the stronger accenting of the vertical elements is also then retained, when only narrow window piers exist, the problem is then solved by a triple subdivision of the pilaster, two half pilasters being joined to a whole one, as done on the uppermost story of the court facade of Palace Farnese in Rome and as shown in Fig. 199 from a shop in Rome.

#### 98. Rhythmic Bay.

The noblest development of the subdivision of the facade is given to us by the great Buonarroti from Urbino by the transfer of the rhythmic bay in the interiors of the vaulted rooms to the external surfaces of the walls, an arrangement that presumes the maximum distance between axes, in the sense in which Bramante employed it in his work on Palace Cancellaria in Rome. We do not have to do here with coupled pilasters, but with pilasters joined in piers, attached to the window piers, resting on pedestals in the antique Roman way, and stopping the belts and the friezes beneath them in the required manner (Fig. 146);—one of the most effective and grandest motives of the new art!

In a noble manner has this facade motive been further developed and splendidly extended by one of the most powerful masters of the later period, Michele Sanmicheli, in his Palace Bevilacqua in Verona. The Three great windows of the upper story are formed like triumphal arches and are enclosed by three-quarter columns, the spandrels of the arches are filled by figures, and the narrow spaces between the great windows and the columns, which Bramante left plain in their effect, are broken by smaller window openings, -- one of the most beautiful and original examples of ostentatious facades, that the Italian Renaissance has produced, and which is worthy to be placed beside the best produced in all ages. (Fig. 147).

We will not leave the representatives of Type 1, the Florentine rusticated and pilaster facades and their developments,



without mentioning one of the most charming examples; the facade of Palace Mancini in Cortona (purporting to be by Antonio da Sangallo), its middle story adorned by pilasters, which seeks to combine the Florentine loggia with the solid stone architecture, for the master resolves the uppermost story entirely into an arrangement of piers and columns (Fig. 148).

157 99. Examples of the Colossal Order.

As representative of Type 4, which is best treated here on account of its connection with the examples in which the orders of pilasters are arranged on the different stories, these buildings of the great Florentine, Michelangelo, may serve, the facades of Palace Senator and of Palace Conservators in Rome.

On high stories, the orders of pilasters or of columns may well be borne above each other: on low ones, they must appear paltry in comparison with their antique prototypes. Men believed themselves able to weather the difficulty by recalling the pseudoperipteral structures of the ancients, considering the facade again as a whole, omitting the graduated stories, permitting the building, like the former temple, to consist of the base, the columnar structure, and the entablature, inserting the enclosing masonry with windows and string-courses between the great vertical supports. There is indeed no question, that a greater effect was thereby produced, but at the cost of the organic, which was then completely effaced.

Sangallo (Vecchio) indeed made the earliest attempt in this form in Palace Nobili in Monteoluciano, where he raised the Ionic pilasters on high pedestals and inserted between them the great round-arched window openings and the rectangular windows of the middle story (Fig. 149).

Palladio perfected this idea in the most imposing manner in his buildings in Vicenza on Palace Valmarano, represented in Figs. 150 and 151, and on the so-called Library of the old Seminary. Unfortunately, genuine materials were not always at the command of the master, for he was compelled to construct many of his massive colonnades of bricks and to coat them with stucco, which did not agree well with the bold desire.





## 100. Roman Type.

The first example of the Roman type, of which we have taken Palace Farnese as the greatest representative, extends back to the beginning of the Renaissance, into that period in which mediaeval and new motives occurred side by side, and which are represented on Palace de' Venezia in Rome (Figs. 152 to 154). Neither is there a graduation of the masonry upwards, nor is any vertical subdivision here executed. The regular arrangement of the windows is mediaeval; also mediaeval is the massive main cornice of consoles spanned by arches and the battlements above them, as well as the tendency to continuous window-sill belts and the stone mullion and transom in the rectangular windows, while the details, the wide and beautiful architraves with the shields of arms and the inscriptions, the semicircular headed windows with and without impost caps, bear the impress of the new style.

The omission of all vertical subdivision by pilasters, columns, or vertical bands, made possible a greater freedom and variability in the arrangement of the windows and also permitted a freer movement in the shaping of the ground-plan; but the Italian mediaeval regular division by window axes yet always prevailed. The only, yet always strongly accented, verticalism in the facade is the protection of the angles of the building by ashlar courses, but the low base, the continuous window-sill belts with the friezes or astragals beneath them, or also in combination with a bold string-course between stories, the window pedestals more or less rich, the smooth ashlar, brick, or plastered surfaces of the facade walls, and a strongly dominating principal entablature, designed with reference to the entire height of the building,--these are the characteristics, as they are harmoniously executed on Palace Farnese (brick facing), Palace Sciarra (Stucco surface), Palace Ruspoli, and Palace Capronica, all in Rome, on Palace Riccardi-Manelli in Florence (brick facing), further on Palace Pandolfini (stucco surface), Palace Bartolini, and Palace Larderel (ashlar facing) in Florence, in Piacenza on Palace Farnese, and on many others of this group, mostly on a large scale.

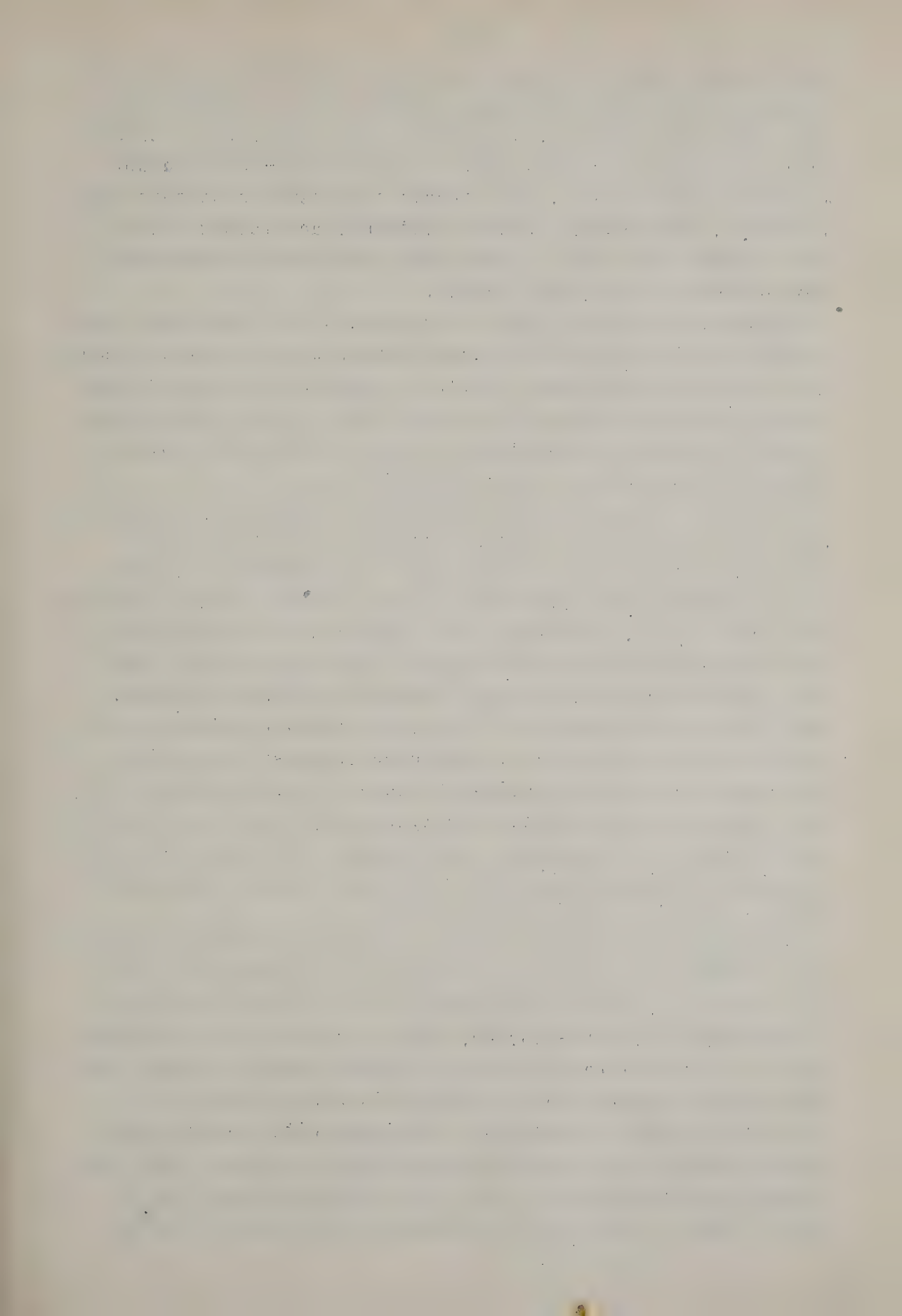


159 A beautiful addition to the otherwise simple system, on which our city architecture is still modeled, is executed on Palace Bartolini (now Locanda del Nord) among others in Florence, i.e., the connection of the window caps together by flat bands and the creation of deeper rectangular recesses on the window piers of the upper story, and the use of the Late Roman motive of the semicircular niche with the shell in the quarter sphere between the windows of the second story on Palace Bartolini. The horizontal bands and the vertical recesses on the building hold each other in equilibrium.

#### 101. Venetian Type.

The regular symmetrical arrangement of the windows, the uniform development of the surfaces of the facade, where everything is repressed into a single plane, where no belt nor main cornice deviates from the straight and unbroken line, are omitted in the Venetian type and give place to a more animated form by more or less strong accenting of different portions of the building, where the problem first falls to the Renaissance, to translate the arrangement of plan, already become typical in the middle ages, and the resulting treatment of the facade from the Gothic expression of form into that of the Renaissance. The skeleton with its elements remains; its finish is changed. Compare in this sense the two simple Palaces Cavalli (1400) and Grimani San Polo (1475-85), (Figs. 131, 132). The triply divided facade falls into a central portion and two side parts symmetrical with it, each with two windows separated by a wide pier. All parts are crowned by a common horizontal, rather poor cornice with a falt roof lying behind it. The central portion contains the "water-gate" on the ground level, on the right and left of this being a moderately large grated window, over these being a continuous balcony with respectively three and five columns, which does not strongly project from the plane of the facade. The three parts are separated from each other by vertical bands (pilasters). But this separation is found to be omitted again on Palace Corner-Spinelli; the triple subdivision of the facade is only and solely produced by the arrangement of the windows. The water gate with the grated windows remains in the ground story, the two Florentine





round-arched double windows are coupled together on the central axis in the second and upper stories into a middle portion with continuous balcony, and on the right and left of this at equal distances is placed only a single round-headed double window of similar form. The facade thus remains so quiet and dignified, the relation between openings and masses are so well weighed, that this is not found again on the extremely rich palaces on the Canal Grande.

The water gate gives place in palaces of the later and richer style to the portico of three arches, when a mezzanine story is added to the ground story, not exactly to the advantage of the good proportions of the building, for the substructure is made too high in proportion to the two principal stories. (Compare Palace Corner della Ca' grande).

The ground story on Palace Rezzonico is more happily conceived by the omission of a mezzanine beside the water gate, which has a truly noble effect with its rusticated columns and horizontal entablature and is not excelled by the even richer upper story. The two upper stories are subdivided by three-quarter columns into entirely symmetrical bays, only the angles being more strongly accented by double columns. What the original design of the ground story promises is unfortunately not retained by the upper stories; it permits the expectation of a grouping of the windows, but we find only a Florentine symmetrical subdivision with too rich details, and decoration by ornaments and figures. The high frieze of the principal entablature with its oval windows is not exactly the best arrangement for an ending.

The magnificent facade of Palace Pesaro in Venice by Bonghena (1650) is in its ground story a mean between the two just mentioned, for on the right and left of the water gate are arranged two half-stories, whose total height is harmonized in a masterly way with the two upper stories, except for the coupling together of the small windows vertically.

The water gate is beautifully designed with the two great arched openings and the semicircular niche between them; the diamond paneled ashlar of the wall surfaces impart to the ground story a character of hauteur and defiance. A triple



subdivision is sought in the upper stories by the alternation of single and coupled columns, but it is not expressed with sufficient clearness. The round-arched windows between them with the massive keystones and the cupids wrought in strong relief on the spandrels of the arches and the double arrangement of the small columns on the window jambs give to the architecture something inharmonious, and in spite of the too great richness, majestic repose and strength are lacking above, that are so strongly expressed in the ground story (Fig. 155). The effect of the whole is improved by the fact, that the frieze of the principal entablature is unbroken in any way, but has fixed and strongly projecting relief ornaments. Without hesitation, we must designate the Palace one of the finest works in this domain during the 17th century in Italy.

More quiet and refined in contrast with it stands the older Palace Vendramin Calergi, built by Pietro Lombardi (1481), recalling Palace Corner Spinelli in the treatment of the windows. In my opinion, the ground story of Palace Corner Spinelli is more properly and monumentally conceived and executed. But unfortunately at the triply arched water-gate, the side arches are subdivided in the same manner as the windows in the upper story, where by three double windows is formed a central and two side divisions, each with a double window; coupled pairs of columns separate them. Everything here shows the most carefully arranged regularity! The small windows in the mezzanine of the ground story are beautifully arranged, and the principal entablature is well harmonized with the whole in form, dimensions, and projection.

Palace Manzoni in Venice of the epoch of the Lombards (1500) also deserves special mention; built but a few years earlier than Palace Calergi, retaining the Gothic design in the most refined Renaissance forms, with perhaps too slender proportions of the round-headed windows. The high frieze, decorated by candelabras, garlands, and eagles, extending beneath the windows of the middle story to the height of the balustrade of the balcony, the finely distributed incrustation with rectangular slabs and circular pieces of marble of different colors, the refined enclosures of the windows, the pilasters with





strong and perhaps too large capitals, the five-fold arcade of the central portion, and the elegant principal entablature, make it one of the most finely designed creations on the Grand Canal.

The great master's hand is shown by Palace Grimani, built by Sanmicheli, with its subdivision by pilasters and columns extending through all three stories, with the projecting flight of steps extending across the entire middle portion, and the base of rusticated ashlar, which rises from the water as if conscious of its purpose. The rhythm in the succession of the windows in the upper stories, -- three great round-arched windows alternating with two of rectangular form, separated from each other by three-quarter columns, -- recalls what the same master attained so splendidly in Palace Bevilacqua in Verona. What is there striven for by an over abundant wealth of form, must here yield to a more severe and colder manner.

#### 102. Final Considerations.

The not excessive development in the height of Venetian palaces, the interesting grouping of the windows, the noble and light colored building material in its perfected technical treatment, the growth of the buildings out of the quiet surface of the water, with never an unwise economy, the refined and sometimes over rich details, beset with ornaments and figures, lighted by a bright sun and backed by a deep blue sky, the buildings here and there interrupted by a little garden with its fresh green, brilliant flowers and golden fruits, -- all these together permit the highest and most entrancing impressions of the imagination to revel among the magical palaces of the city of the lagoons, carried by recollections of great events in the history of the world, that occurred on this soil, to the famous past of the republic with the melancholy final consideration of the transitoriness of everything earthly. Saxa loquuntur (the stones speak); the stones make the fame of the ancient art of Venice known to all posterity. Where the tongues of mortals are silent, architecture speaks the words of eternity!



## 103. Palaces in Genoa.

"In the closely set architecture of Genoa, the proportions of the facades are generally neglected, and a pleasing ornamentation is everywhere omitted."

Note 77. See Burckhardt, *I. Geschichte der Renaissance in Italien*. p.200. 2 d edit. Stuttgart. 1878. (Eng. trans. in Univ. Library).

I cannot accept this statement, in view of the palaces on Via Nova and on other streets or on public places: most rather have their facades subdivided in accordance with very definite and clearly expressed principles, resulting from originality in the arrangement of the plan, that naturally is developed from local conditions, mostly required by the sites rising in terraces from the level of the sea to the tops of the hills, and the location of the streets, stepped one above another. The movement found in all recalls the Venetian type in many respects. We there saw the water-gate placed on the central axis of the building with two side windows, and in Genoa we find as a central part the vestibule, lying directly on the street and on the ground level, raised but little above the sidewalk, and which, "devoted to one of the highest problems", here enters as another element of beauty in combination with the stairway. A continuous flight of steps connects the vestibule with the higher level of the court and the staircase, thereby producing effects in lighting and picturesque views toward the interior of the building, such as scarcely occur elsewhere, are seldom equaled, and never surpassed (fig. 156; section through such an arrangement at the University; Fig. 157, view in Palace Durazzo).

Characteristic again is the triple subdivision of the facades, the division into two side wings and a central part of entirely equal width, which is peculiar to the Great and Little Palaces Brignole (Durazzo-Brignole with the spirited hermes figures supporting the balcony), the University, and Palace Durazzo, among others.

But the Palace Tursi-Doria (now Municipio) is equal to the best Tuscan palace, designed with nine axes and its one-story arched porticos built at the sides, and likewise the Palace





Durazzo in its simple and grand form with arched side porticos in the upper story. The outlines and proportions of the parts of the building are here as well and earnestly conceived in reference to each other as elsewhere.

Palace Lercari must have had a charming effect in its original condition with its arcaded loggia in the upper story, where there can indeed be no suggestion of a neglect of proportions, to satisfy which more attention must be paid, than on the plain facades of mediaeval cities.

The normal arrangement of the palace of a family is that in two stories, where a mezzanine is placed over each principal story, and the principal entablature is generally executed like a balustrade or an attic.

Thus the subdivision of the facade into three equal parts, with a but slightly projecting central portion, the location of the entrance portal on the middle axis of the building, the arrangement of a half-story above each of the two apartment stories, the animation of the surfaces of the facades by pilasters, the decoration of these by stucco and painting, -- these are briefly stated, the characteristics of the facades of Genoese palaces, on which are always found beautiful and rich entrance portals, that repeatedly form the only expressive ornamentation of a facade.

It is frequently believed, that all money remaining to an owner for the decoration of his house was spent for an artistic portal, a handsome court, and a beautiful staircase; this is particularly true for the lofty, rented palaces in the huddle of the narrow streets of Genoa, where moreover all ornamentation of the upper part of a facade would have been foolish, which owner and architect well understood. The portals say to us: local conditions compel the omission of any endeavor for an artistic treatment of the exterior; yet we will show that under other conditions, we should have known how to do otherwise. We had knowledge, means, and artists to do so; but sound human reason forbade us to do otherwise, than we have done. In these parts of the city, the neglect of well designed proportions on the facades was certainly self-evident.



## 104. Palace Doria-Tursi.

The grandest representative of the Genoese palace style is the already mentioned Palace Doria-Tursi (now Palace Municipio), built in 1564 by Rocco Lugarno for Niccolo Grimaldi, Prince of Salerno, with nine axes and in two stories and two mezzanines, of white marble, gray and reddish shell limestone. It passed in 1593 into the possession of Doria, then came into those of the Jesuits, whereby under the varied ownership it experienced many changes in the interior, especially in that of the staircase, and not always to its advantage.

The main entrance portal is especially distinguished by columns, figures, and by heraldic ornament. Above a high lower story, as for all palaces of Genoa, required by the low position of the entrance vestibule and the elevated location of the court, there rise the two upper stories, each of which is externally combined with the corresponding mezzanine into one. Pilasters of the Doric order with rusticated capitals subdivide the middle and uppermost stories; but the shafts of the columns are here decorated by flutes instead of rustication, -- thus there is a graduation of the expression of the elements, i.e., a more ornamental treatment of them upwards.

The triply arched side porticos are 27.9 ft. high, and with their terraces, they give the building the appearance of a princely palace.

## 105. Palace Durazzo-Pallavicini.

The existing Palace Durazzo-Pallavicini is almost as massive and large with its simple architecture, the stuccoed surfaces of its facade, its belt-courses 3.28 ft. high, its three-arched loggia in the upper story, and it is a work of Bartolomeo Bianco (1656). Transformed internally by Tagliafico, to whom we owe the peculiarly beautiful and noble stairway with self-supporting marble steps 8.70 ft. long, as well as the connecting staircase between the vestibule and court with the preliminary arcade and the figures before the two middle columns. (Fig. 158; plan). The stairway is covered by a tunnel vault with coffers, whose two end walls are occupied by round-headed glazed windows, through which the interior is flooded with serene light. The end wall beneath one opening for light is





166 subdivided by an arrangement of Ionic columns, which opens into a rectangular recess in a wonderfully beautiful architectural design.

A technical note should be added. The two open loggias are executed without any visible tying of the vaults, wherefore these show two parallel cracks extending on the right and left of the crown and the columns lean outwards.

#### 106. Palace Regia Università.

The present Palace Regia Università was originally built from the plans of Bartolomeo Bianco as a Jesuit College in 1623 and was only transferred to its present use in 1782. This building of the Jesuits (like the Brera in Milan, which was built for the same purpose by the same society) excels all other palaces of Genoa in the grandeur of the design of the court. The porticos along the sides of the court are extended to the wall of the facade, so that the court is surrounded by porticos on three sides, in the midst of which a straight flight of 23 steps affords passage from the vestibule to the floor of the court. The balustrades of this staircase are not carried down to the first step; they already terminate on the eighth step in pedestals supporting spheres, adjacent to which great marble lions guard the entrance (Fig. 159). The monotony of the single flight is thus interrupted in the finest way by these pieces of sculpture. The court measures  $42.6 \times 75.5$  ft., the main stairway opens at its end and is enclosed by colonnades of coupled columns, which support architrave, frieze, and cornice, on which rest the plain arches in the antique manner.

The view from the high vestibule towards the porticos 24.6 ft. high, with the forest of white marble columns and the beautiful stairway in the background, produce the highest charm. Everything breathes freedom, airiness, light, and sunshine; the breast expands more freely in this temple of knowledge than in the again fashionable, stumpy, monastic-like, porticos of modern buildings for like purposes. However nobly beautiful is the interior, just as unfortunate is the weak and meanly treated exterior.

167 In reference to the execution of the building, it is to be



stated, that the arcades around the court are all constructed without visible ties; for this reason, the columns are 4 to 6 inches out of plumb and are inclined toward the court, which Reinhardt<sup>78</sup> already stated earlier in the words:- "The execution of the entire building is careless and inaccurate, and the columns of the court are in great part inclined toward the court by the thrust of the vaults." The masonry is built of quarried stones, the vaults are of bricks, the ceilings of the large apartments are built of wood in the form of vaults and are plastered; the columns and the entablatures resting on them are of white marble, like the balustrades, as well as the belts, and are covered by slate slabs. The rain water is removed from the pavements of the porticos into the court by small openings in the masonry lined with lead. (Fig. 156).

*Note 78. Reinhardt, p.3.*

#### 107. Palace Balbi.

On account of the peculiar design of the stairway, Palace Balbi is to be mentioned (Fig. 160; plan), which was caused by the later arrangement of Via Nuovissima, which obliquely intersects the axis of the building, and which was solved by Gregorio Rotondi in such a spirited manner. The original building had its chief entrance from the lower Via Lomellina, and after the intersection, retaining the existing one, this must have been transferred to the new street, thus producing two stairways, which resulted in the bridging over of the little court by a flight of steps, in order to be able to reach the upper story from both streets.

#### 108. Palaces with Painted Facades and Stucco Ornaments.

As examples of painted facades may be mentioned; Palace Spicola with frescos and rich painted borders surrounding the simple stone enclosures of the windows, with reclining figures on the pediment window caps, then Palace Franzone in Albano with a painted sham architecture of doubled pilasters with figures placed before them.

Of palaces with stucco decorations, there are to be mentioned Palace Faggio with hermes-caryatids in the ground story and Palace Degli Imperiali.<sup>79</sup>

*Note 79. A collection of Genoese palaces, villas, public*





buildings and churches may be found in these works:--

*Palazzi Antichi di Genova, raccolti e disegnate da P. P. Rubens. Anversa. 1652.*

*Gauthier, M. P. Les plus beaux Edifices de la Ville de Genes et ses Environs. Paris. 1830.*

*Reinhardt, R. Palast-Architektur von Ober-Italien und Toscana vom 15 bis 17 te Jahrhunderte. Genua. Berlin. 1886.*

Not to be forgotten are the numerous small private houses with graceful portals in the style of the Lombard Renaissance, with their charming little courts and stairways.

#### 109. Palaces in Milan.

"Milan has an abundance of splendid buildings, but no peculiar type of palace;" the Roman type with or without the use of the colossal order is the one most prevalent. Nothing of the old palaces of the Early Renaissance now remains. The Medici Bank of Filarete has disappeared; Palace Marliani was torn down in 17<sup>80</sup>. A few private houses of that period are still preserved.

Note 80. A view of these after an old engraving is to be found in Müntz' *La Renaissance en Italie et en France*. p. 239. Paris. 1885. -- Pointed-arched windows in the style of those on Hospital Maggiore in Milan between Corinthian pilasters.

Note 81. The interesting project of a palace from Filarete's Milan period, a 3-story building surrounded by water and having a large central part with two angle porticos furnished with added loggias with triple arches, remained merely a project. A drawing of it is to be found in Müntz' *Histoire de l'Art pendant la Renaissance. I. Italie. Les Primitifs*. p.485. Paris. 1889.

And yet here are again motives, which do not reappear elsewhere and which indeed were produced on Milanese soil; they are hermes-figures and half-figures, caryatids instead of the pilaster or the three-quarter column.

The Omenoni, i.e., colossal figures on the House of the sculptor Lioni, an exhibition of eight bearded half-figures with bowed heads and folded arms, as high as the lower story of the house, are forms that we seek in vain in other cities. Six of the giants bear submissively the fate to which they



are condemned; the two on the right and left of the portal support on their backs the projecting balcony. The upper portion consists of the living story and a mezzanine, externally combined into one story, which is subdivided by Ionic half-columns corresponding to the giants on the ground story. Between the columns are arranged semicircular niches for figure ornament. the form of the strongly projecting principal entablature and of the attic is interesting.(Fig. 161).

Hermes-caryatids for subdividing the surface of a story (heads with steles diminishing downwards) are placed on Palace Marini, now Palace Municipio, built by Galeazzo Alessi in 1555, on which the heads on the chief facade are forced between the consoles of the main entablature. They are not less than 21.3 ft. high and are arranged in pairs at the angles of the projection. Less expressive are those found on the piers of the upper story in the charmingly decorated court (Figs. 162, 163), where the heads have volute-bolsters, on which rests the architrave.

The principal facade towards the Place S. Fedele is erected in three stories: the ground story contains high living rooms with a mezzanine over them, like the second story, the wall surfaces being subdivided below by Doric and above by Ionic supports, while the uppermost story is subdivided by great hermes pilasters extending to the main cornice. The latter is boldly treated, is designed with reference to the entire height of the building, and is crowned by an attic.

The facade towards S. Giovanni alle Case rotte on the contrary has only three-story angle pavilions with a two-story intermediate structure. One side of the state court lies next the street, but does not open from it, or only through the entrance doorway.

The combination of the larger living apartments with the low rooms of the intermediate story to form externally a single story was transferred from Genoa, where this arrangement is typical. How favorite these hermes-piers were may be deduced from the fact, that they were used without reflection, likewise on the great middle window of the Church della B. V.





presso S. Celso.

Hermes-like pilasters with Ionic capitals, like those so greatly loved by the German Renaissance, we find subdividing the facade of *Palace dei Cieureconsulti*, built (1564) by *Se-regni*, which with its clock-tower forms the northern side of *Place dei Mercanti*.

*Palace del Tribunali* was built in 1605 and shows the unsettled Roman type, as well as *Erba-Odescalchi*, built by *Pellegrini*, with broken pediments and intermediate busts over the windows of the third story.

*Palace Annoni*, built by *F. Ricchini* in 1631, combines the principal story with the mezzanine, but is otherwise designed according to the Roman type.

The present *Palace Reale* was erected on the site of the old *Palace of the Euler*, covers on the *Cathedral Place* an area 886 ft. long and averaging 394 ft. deep, and it has a masterly arranged ground plan with the principal court and eight subordinate courts, vestibules, stairways, passages, stables, halls, living rooms, palace chapel, for which was utilized the half-Romanesque Church *S. Gottardo* with the interesting brick tower built (1336) by *Pecorari*.

This *Palace for residence* was extended from 1335 onwards, from *Assone Visconti* to *Napoleon I.* In 1573, the Spanish governor, *Guzman Fonce de Leon* first marred the old building, desiring to fit it up in accordance with the taste of his period, when he had all the richly ornamented Gothic windows torn out. The emperor built additions in 1717 according to the designs of *G. Barbieri* from *Parma*. The empress *Maria Theresa* later called *Vanvitelli* to restore it. But the great architect desired to clear it away entirely and to build anew, which was rejected and a restoration was decided on with the use of the old walls. *Vanvitelli* declined this and recommended for this work his pupil *Gaspere Piermarini di Foligno*. This afterwards took another turn through the interference of *Napoleon I.*, who entrusted the execution of his ideas to *Cavalier Luigi Canonica*.

The principal facade, of the Roman type with a colossal order extending through two stories, the lower built in ashlar



masonry, the great hall and the main staircase, are the work of Piermarini, while the rear facade was designed by Canonica and executed by Tazzini. Thus the work lasted until the close of the third decade of the last century.

The school of Vanvitelli likewise appears in Palace Belgioioso (Villa Reale), built in 1790 by L. Pollack, which is characterized by a fine but strongly academical ground plan. The octagonal form of the gateway has its model in the Palace at Caserta.

Palace della Societa detta del Giardino was built at the end of the 16 th century, either by Pellegrini or by Seregni, according to the Roman type. Remarkable is its plan with two courts, one constructed with piers, the other with three-quarter columns.

*Note 83. A large number of public buildings and palaces is contained in Cassina, F. Le Fabbriche piu conspiciue di Milano. Milan. 1844.*

#### 110. Palaces at Ferrara.

"The most beautiful buildings of the Dukes of the House of Este have disappeared; the castle is unequalled in picturesque and imposing appearance, but cannot be considered a palace. -- In Ferrara, as generally in the cities of the lesser princes, the private palaces of the nobility are never as important as in the former capitals of the republics. The mistrustful rule, as well as the financial oppression of the House of Este in the 15 th and 16 th centuries, permitted no expression of power in architecture to appear."

*Note 84. See Burckhardt. Der Cicerone, etc. p.212. Basle. 1860.*

The Palace dei Diamanti, begun (1493) for Sigismund d'Este, belongs to the most important of Ferrara. It now serves for a museum. Its peculiar marble ashlar-work with nail-head panels on the face of each stone, which gives to the building a characteristic and unquiet effect by the uniformity of treatment of the stones (similar forms on Veronese and Venetian palaces), and this is set with fine joints, the cutting at the angles being as close as if rubbed, like the edges themselves.





The ceilings in the interior are remarkable, often being very beautiful and characteristic, but have partly lost their figure sculpture decoration. The great hall with five windows still retains a coffered ceiling in the natural color of the wood, the corner hall beside it having one with paintings in bright colors and rich gilding, the "Settina Sala", a ceiling divided into octagonal and lozenge panels, which are chiefly painted green and gold, while the succeeding one is kept in white, green, and gold.

Palace Schifa-noja likewise adds a very beautiful coffered ceiling in blue and gold with a deep frieze on the wall (Fig. 164).

Palace Roverella is distinguished by an extremely graceful facade, which has over its marble portal one of the few great bay windows, that have become known to me in the Italian Renaissance. (For the reasons for arranging these in the middle ages, see p. 125, and p. 270 for the description of the bay window. German text).

The architecturally unimportant Palace Schifa-noja was built by Duke Borso in 1470 and exhibits a good portal with a coat of arms above it.-- Palace Scrofa shows a splendid court, "that displaced ten palaces". -- Palace de' Leoni has the most beautiful arabesques at a noble portal with a balcony surrounded by cupids. -- Palace Bevilacqua and Palace Zaffi have facades with open porticos on the street.-- To the 16th and 17th centuries belong Palace Bentivoglio and Palace Costabili, as well as the best of this period with rather severe classicism, Palace Orispo, entirely covered by proverbs and designed by Girolamo da Carpi.

As a last building of the Este should be mentioned La Pallazzina, a once charming garden-house, now fallen into ruins.

#### 111. Palaces at Padua and Vicenza.

Padua was in 1405 degraded to a Venetian provincial town, which sensibly appears in its private buildings; its palaces are therefore of little importance.

In Vicenza predominate the already mentioned palaces with a colossal order and by A. Palladio. The buildings of the city during the period of the Early Renaissance give evidence



of a well developed feeling for architecture. Among the palaces of Palladio should especially be mentioned Palace Chieragati on account of its open portico in the lower and upper stories, spanned by architraves. Stuccoed and now painted yellow, it unfortunately loses much of its effect. For a plan, see Fig. 165; Palace del Conte Giuseppe di Porto in Vicenza.

#### 112. Palaces at Bologna.

"For palaces of the Early Renaissance, that must here be extended beyond the first decade of the 16th century; Bologna is one of the most important cities of Italy. But two almost constant limitations occur, which make impossible here a Florentine or Venetian development of palace architecture; bricks and the use of the ground story as a street portico. The latter use is in itself very beautiful and beneficial in summer and winter, but hinders the production of any strong and united composition; it produced almost entirely horizontal buildings, in which the relation of length to height was not considered at all, the centre was not accented, and the tower, for example, was capriciously added".<sup>85</sup> Yet here is also no rule without exception, not everything is of brickwork, and street porticos are not found everywhere.

*Note 85. See Burckhardt. p. 207.*

Palace del Podesta, built by Francesco Fossati di Dozza in the years 1492-4, has a two-story facade with nine axes, well considered in its proportions. The ground story indeed has an arcade, but has Corinthian columns with returned entablatures set before it, deep arched jambs with small diamond ashlar and bold ashlar projections of similar form at the angles. An united whole is certainly not created in this detached monument; its distinctly expressed endings with the massive angle piers in ashlar mentioned prevent the entertaining the possibility of any further extension of the structure, which is likewise forbidden by the course of the streets. The architect was thus admonished to count upon the given space.

The receding upper story has great round-arched windows; the wall surfaces are animated by decorated Corinthian enclosing pilasters, which support a finely divided architrave. The high frieze lying above it is ornamented by small round windows;





the main cornice is wanting and is now replaced by a plain wall with projecting rafters.

This story is built of brickwork, as afforded by the nature of the material. But just this boldly subdivided stone substructure with the motive of the engaged columns and broken entablature, in combination with the fine brick masonry of the upper story and the high main entablature with the enclosed round windows in the frieze, give to the Palace something distinctly characteristic, that is not found again, neither in Tuscany, in Venice, nor in Rome.

But it should not be concealed, that originally this mode of construction was not planned by the earlier architects. The projecting columns were first added in the 16th century and recall the allied design of Palace del Comune in Grosseto. According to the design of 1482, piers with columns wrought on them and a continuous frieze were intended, which were destroyed on rebuilding the arcades. The main cornice was never constructed, but it did not differ from other Florentine palaces of this period. The projecting engaged columns are decorated in the Tuscan manner by iron holders with rings, one of which is shown in Fig. 166, now preserved in the Museum Civico.

*Note 86. "Soretto da pilastri con colonne incastrate" in Valeri, p. 110.*

Palace Bevilacqua (built 1482) lacks the arcades along the street and the use of brick on the front facade. According to Florentine style, a base course extends along the street front, which is only broken by the two entrance portals, one of which is enriched by pilasters, entablature, and a tympanum of semicircular form.

The ground story is divided into two halves by a window sill course, the horizontal effect being thereby emphasized more than is absolutely necessary, though on the other hand, the upper story has so much stronger an effect. The windows of the ground story are rectangular and are finished with caps; the windows of the upper story rest upon a continuous belt course, beneath which extends a decorated frieze and an architrave, and they are a mean between the Tuscan and the Venetian double windows of this period. Characteristic additions are to be considered the relatively large acroterias at the impostes and



the middle acroteria at the crown of the arch. The building terminates according to the Roman style with architrave, ornamented frieze and a heavy cornice with modillions, designed with reference to the entire height of the building, but like that of Palace Riccardi in Florence, turning out to be too rude. The wall surfaces are covered by the so-called diamond paneled ashlars (those on buildings of Verona and Ferrara; Casa dei Diamanti), which are graduated with too weak an expression. The high surface between the windows of the upper story and the main entablature has a grand effect, and it is as well considered as on Palace Strozzi and Palace Rucellai in Florence. The little balcony inserted over the rich portal with a graceful wrought iron railing is <sup>not</sup> most happy, but is still an interesting addition. (Fig. 167).

Of greater beauty and wonderful in its symmetry, complete in detail, is the court, entirely built of brick (excepting the columns). (Fig. 168). Now whitewashed, it originally appeared in the full color of the material, which was enhanced by paintings in bright colors. For example, the frieze above the arcades of the upper story was painted with ornaments in gray on gray upon alternately reddish-yellow and black grounds, as shown by the falling of the whitewash in some places. The costly frieze of shells and medallions of red terra cotta must also have had gilded frames and colored accessories. A charming addition is further the little running fountain in the court: on a tall square pier with volute capital sits a small lion emitting a stream of water into the hollowed Corinthian capital standing on the pavement.

The peculiarity should be mentioned, that the archivolts in the court do not directly rest on the capitals, but upon impost blocks interposed according to the Late Roman or Byzantine style. All arches and vaults have visible tie-rods.

From the second half of the 15th century (completed 1570) comes Casa già Bero detti "dei Carracci", that should be included in the number of palaces, but which likewise has no arcades of columns along the street. The building is entirely of brickwork from the sidewalk to the main entablature





and shows us the Eolognese palace type unchanged; a plain and continuous high base has a round at top; above it project from the wall consoles of brickwork without any ornament, and these are joined by semicircular tunnel vaults and show richly decorated archivolts; the facade wall rises flush with the latter with a window-sill course, from which extend semicircular Tuscan double windows with their characteristic side pilasters and wide ornamented archivolts, with acroterias at the imposts and crown. This motive, without changing the acroterias into stone, was also employed by Vittoni in the interior of his Umilta in Pistoja. The upper story is crowned by an architrave, a high frieze with circular openings and adorned by painting, succeeded by a moderately projecting modillion cornice of brickwork. It is a brick structure, heavy on the whole, but fine in detail and executed without fear of full color (Fig. 193).

Again without an arcade next the street is the Palace Fantuzzi, built during the time from 1517 to 1521, with three stories and eleven window axes, the windows with horizontal caps in the second, and with pediment caps in the third story, ending in a cornice with coupled modillions. A complete design of not good proportions, but with an unfortunate treatment of the ashlar masonry and of the three-quarter columns subdividing it (Fig. 107).

A perfected composition in the form of an "arcaded palace" of definite length is shown by Palace Fioresi, built in 1518 by Formigine, who repeats in his arcade story the arrangement of Palace del Podesta and of Palace Municipio in Frescia, with projecting three-quarter columns of the Corinthian order on high pedestals with high arcades. The upper story is likewise animated by three-quarter columns, and it is crowned by a massive antique main entablature, consisting of architrave, frieze and modillion cornice, above which rises a strongly receding attic story. The windows in the upper story are rectangular, covered by segmental caps, the wall surface being built of red bricks, left visible. Above the middle one of the five arches is awkwardly inserted a balcony, while the belt course of the ground story ends unchanged against the



side parts of the balcony balustrade and the balcony floor lies below that. The increased height of the lower story caused by the stilted arcade gives the Palace a somewhat imposing effect, which may partly be due to the fact, that the semicircular arches between the columns are not repeated in the upper story.

Palace Bischi, built in 1545 by Agostino Bolognetto, again exhibits a closed mass of the building without street arcade and with a rude rustication on the base, portal columns like those of Ammanati in the court of Palace Pitti, with rusticated enclosures of the rectangular windows of the ground story, that are again placed very high in accordance with the Bolognese style (compare Palace Bevilacqua on page 176).

Palace Albergati, begun in 1520 by Battista da Como, but only commenced again in 1540 and 1584 and completed in 1612, is imitated from Palace Varnese in Rome. Bold ashlar projections strengthen its angles; from a very high continuous base of brickwork rise two stories, separated from each other by cold belts arranged at the height of the window sill (architrave, triglyph-frieze and string-course), which terminate with a Roman entablature with small windows in the frieze. The details have a classic feeling; the large wall surfaces are built of bricks, that were indeed originally covered by stucco.

Palace della Zecca, built by Scipione Dattari in 1580, is again a composition not injured by a street arcade. The windows are enclosed by rusticated ashlars in all the stories, the angles are strengthened by ashlars, and the surfaces of the facade are stuccoed; as a palace with five windows, it remains a somewhat dry and rude work.

Another palace without arcade is Palace del Tribunale già Minini di Palladio (1572) with two side wings built in 1584. The middle portion bears over a story with a colossal order an antique pediment with a coat of arms and figures.

These nine examples may show that palace architecture in Bologna did not always move within such narrow limits as might appear at the first glance.

Also the Palace built in 1491 by the family of Ghislieri,





afterwards in the possession of Malvasia and now the well known Hotel Brun-Frank, may be mentioned as a last great example of a Bolognese brick palace without arcade.

~~114. Normal Bolognese Palace.~~  
In the state archives is preserved the drawing of a Bolognese palace, reproduced by Malaguzzi-Valeri (p. 153). It is a two story "arcade palace" with ten axes, opening into a street at one side and built up at the other. The ground story shows a round-arched arcade resting on columns, above this being a horizontal belt on which rest round-arched windows without interposed small columns, but which possess the broad archivolts and the three characteristic acroterias; the window leaves are subdivided by cross pieces into small rectangles, the walls are carried up high above the windows of the upper story and terminate with a continuous belt course, over which are found semicircular windows opening beneath compartments. A tile roof of moderate height with four chimneys with pointed hoods covers the building, whose angles are strengthened by ashlar.

This scheme harmonizes in general; but I did not see that this form of cornice was most commonly constructed in Bologna, like that occurring with the aid of painting, for example, on the Tower of the Certosa near Pavia and in other places in Upper Italy. (Fig. 212).

I consider normal those cornices constructed above the upper story in the form of an architrave, a high frieze containing small windows, and a cornice with modillions, like those to be seen on Palace del Podesta, Palace Pallavicino (1497 - 1528), Palace dei Carracci (15th century), Palace Salina-Amorini-Bolognini (1525), Palace Ghislandi, built in 1483 by Montarini, and on Palace Zucchini, built by Terrabilia in the 16th century. These are all long facades, which may be extended as far as desired.

But among those palaces with porticos, praise should not be withheld from Palace Fava. It possesses one of the most beautifully developed brick facades with well graduated stories and an interesting court. The massive portico rests on a plinth pierced by cellar windows, the original piers of this with pilasters and columns, the not too slender proportions, the plain, earnest and broad wall surfaces with the finely



detailed and characteristic double windows, over which is the low half-story with the small semicircular windows and the effective crowning Corinthian-like main entablature, -- all these are motives, which in their combination ensure to the building its high importance. The massive ornamental consoles towards the court and composed of eight courses, which support the front wall of the upper story, are likewise interesting additions, although the ornament thereon lacks an elegant flow of lines and in its details recalls such of the late Roman imperial period.

And thus the normal Renaissance palace in Bologna should exhibit a combination of that given in the old drawing with those cornices last mentioned. The continuous series of arches in the ground story remains, over this the semicircular windows with the three acroteries, with or without interposed small columns and tympanums decorated by medallions, over the cornice with circular, square, or semicircular, windows.

#### 114. Other Palaces in Bologna.

As a highly interesting example of the early period, that could not quite be placed as normal, is Palace Isolani (1454), built by Pagno di Fiesole. The portico has a semicircular vault and the arches rest on columns; from the window sill course rise richly decorated pointed-arched windows enclosed by pilasters, above which is a crowning architrave and a cornice with arched frieze on consoles.

Further, Palace Malaguti, built about 1496, that shows in the ground story enclosing pilasters rising from the sidewalk with connecting depressed arches, together with filling masonry, which is no longer original. The upper story is animated by pilasters corresponding to the lower ones; above is an architrave, the frieze with round windows, then the roof cornice, over which are battlements, but richer and more imposing than those of Palace Venezia in Rome.

The balcony with its covered hood is also remarkable.

But instead of arches on columns or piers, the horizontal architrave is also placed on columns in the corridor of the ground story, as shown by Palace Sanguinetti, gia Lambertini, inspired by Palladio and built by Bartolomeo Triachini.





(1545-1581).<sup>88</sup>

Note 88. For the architectural history of this Palace and of other monuments of the Renaissance in Bologna, compare Valaguzzi, F. *L'Architettura a Bologna nel Rinascimento*. Rocca S. Casciano. 1899.

As free supports of porticos, there occur in Bologna beside columns also four and eight sided piers, piers with three-quarter columns, and pilasters with half columns engaged on two sides, of which an interesting example is given by the arcade of Palace Ghislandi (figs. 169-171).

#### 115. Palaces in Naples.

By the calling of the Florentine master Giuliano da Majano on the part of Alfonso of Arragon, the Renaissance also took root in the south part of the peninsula. The best work created there by that master, the Summer Palace Poggio Reale, has disappeared and is only known to us by the drawings by Serlio and a ground plan in the collection of drawings in the Uffizi at Florence.

Besides Giuliano, the Neapolitan Andrea Ciccione also adopted the new architectural style, and we see another master, Gabriele d'Agnolo, working therein before the end of the 15th century; Gianfrancesco Mormandi should further be mentioned.

Of palaces of the early period are to be cited Palace Colobraro (1486) of the Florentine type, Palace Gravina, esteemed for its fine design with massive rustication in the ground story, plain walls and Corinthian pilasters in the upper story. (Burchhardt represents this Palace as being threatened by rebuilding in 1860). Palace della Rocca by Mormandi should also be mentioned, with its massive and great entrance as the dominating motive of the building, and also the exquisite Palace Alice of the same period.

From the late period of the Renaissance is then to be cited Palace Reale, built by Domenico Fontana; Neapolitan palace facades otherwise all stand much further back than similar buildings of the same epoch in Rome.

The Early Renaissance but seldom appeared in palace architecture; so much the more does the Barocco take a part, and as for its facades, "the good in them is not new, and the new is



not good."

#### 116. Renaissance Palaces in Rome.

And what does eternal Rome offer? It created the rhythmic bay (space between window axes) and the colossal order on facades of palaces; it created the High Renaissance with the finest and noblest palaces of the world! In it and in the 16<sup>th</sup> century was completed a new and higher aspiration of Renaissance art. The preceding period made it possible to also solve the most difficult structural problems; manual skill was made standard and all accessory arts were carried so far, the appreciation of monuments by owners and architects was developed, until every question presented could be completely answered.

Architecture had to mark progress in organic structure without falling into dryness, and attention was again directed toward "simple magnitude", and men learned to perceive that by the too numerous details created by the 15<sup>th</sup> century, the impression of power was not enhanced, which the master<sup>s</sup> of the Early Renaissance already knew, like Brunellesco, Cronaca, and San Gallo.

*Note 89. Concerning the nature of the High Renaissance, Burckhardt has collected on 3 1/2 pages in his "Cicerone" (Edition 1860, p. 299-302) everything, that can be said for understanding it. His words sound like a revelation; they should be read again and again and be laid to heart, like the contents of his entire book; for the man is not yet born, who does this better than our master of Basle. -- "Caviare for the multitude" said Gottfried Semper once, -- but a heart-refreshing food for architects, and so will it become.*

Among the palaces of importance in the Early Renaissance in Rome, there is to be named in the first rank the previously mentioned Palace di Venezia, built by Giuliano da Majano, with the included Church S. Marco and its beautiful portico. With a front of 420 ft. and 22.95 ft. axial distance of the windows, the building rises to a height of 85.3 ft. to the top of the battlements and in three stories. Unfortunately, the architect was here unable to use ashlar masonry; but as he executed it, it is effective by its great dimensions, the weight of its





walls and of its main entablature, crowned by battlements, which measure<sup>s</sup> 14.75 ft. from the lower moulding to the top edge with a projection of 2.46 ft. The entablature is designed in height with reference to the total height of the building.

No subdivision animates the wall surfaces; no ornament disturbs the austere and grand simplicity of the main facade; only at the windows of the principal story, which begin on a continuous belt 36.1 ft. above the sidewalk, and which still exhibit the mediaeval mullion and transom, do we see on the lintel a small papal shield of arms with tiara and keys, and on the frieze the inscription regularly repeated at each window, "Paulus Venetus Papa Secundus", and the antique eggs-and-darts on the ovolo moulding of the cap. But the climax of the finest Early Renaissance decoration is formed by the noble portal 29.5 ft. high and adorned by columns and pediment, which is not placed exactly at the middle of the building.

The great court with piers and engaged columns remained unfinished, which repeated the motive of the Coliseum, while the small court with octagonal piers in the ground story and Ionic columns in the upper story was completed. The Gothic in Tuscany had already employed undiminished octagonal piers as free supports, when the supply of antique columns drew near to its end.

Not quite so great in its masses as the preceding is the Palace della Cancellaria, the perfected masterpiece of the great Bramante (1444-1514), the elevated ode of the High Renaissance, in which is embodied everything that we have stated to be a criterion for this epoch, where the Rhythmic spaces between window axes and the preparation for the colossal order was so magnificently expressed on a facade for the first time.

With a facade 300 ft. long, 19.3 ft. between window axes, and a height of 82. ft. for the building, the structure is already made effective by these dimensions alone. The stories are already graduated in height and in expression, and it may perhaps only be stated concerning these, that the principal entablature is merely designed to suit the upper story and



and not for the entire height of the building.

The details are of exquisite elegance and beauty, that must have had an overpowering effect with the gleam of the white marble at the windows, before it received the existing patina.

Just as wonderful in proportions and incomparably beautiful in details is the court, 65.6 ft. wide, with a length of 108.2 ft. and a height of 77. ft. The height of the porticos diminish upwards and above them rise the enclosing walls of the upper story and roof, subdivided by simple Corinthian pilasters, and animated by two ranges of small windows, one above the other.

The main entablature in the court has the form loved by Bramante with plain modillions between architrave and cornice, and is on the whole an effective ending, particularly with the large openings in the two lower stories. Perfected in its proportions is likewise here the detail of the cornice, of the capitals, and of the coursed bands of the piers.

The travertine ashlar were taken from the Colosseum in Rome, and the antique columns of the Basilica of S. Lorenzo in Damaso, well for the inspiration for the monuments of antiquity, which the master aided in his way to reanimate, but without restoring them!

Belonging to the same era as the great model and of almost equal importance with the Cancellaria is Palace Giraud, 139 ft. long and 68.9 ft. high, with 7 window axes and 18. ft. between them. Its details are less finely conceived, and the middle story appears to be too little emphasized, since that is omitted on it, which so effectively participates on the Cancellaria; the extension of the window sills down to the string-course of the story by the arrangement of window balustrades.

#### 117. Palace Vatican.

To Bramante likewise fell the grand problem of the enlargement of the Palace Vatican (Fig. 172). Besides the beautiful Cortile S. Damaso with the Loggias of Raphael, there was especially the great rear court with the Giardino della Pigna, on which should be impressed the stamp of the grand and the novel.

Near the Cathedral of S. Peter had been built the Borgia Apartments<sup>90</sup>, the Sistine Chapel by Nicholas V, and about 1100 ft. from them had already been erected by Innocent VIII the Ca-





Casino Belvedere, from the plans of Antonio Pollajuolo, when Bramante took up the problem. To connect the latter with the former existing buildings by porticos enclosing a court 1004 ft. long and 246 ft. wide was his idea, which was executed, so far as concerns the connecting porticos. Connected with these was the already mentioned triangular court of S. Damaso, designed with beautiful arcades and open loggias in the upper story, but only built after the death of the master.

*Note 90. Ehrle, F. and Stevenson, E. Gli Affuschi del Pinturiccio nell' Appartamento Borgia del Palazzo Apostolico Vaticano. Rome. 1897. -- Plan. Capo primo. p. 10.*

The low-lying court of the Belvedere with the segmental ending of one of its ends should be separated by a stage with interposed broad staircases and a space of garden from the higher Giardino della Fontana di Papa Giulio III, in which design two staircases of two flights each with broad steps must form the transition. The grand motive of the niche at the other end must form the termination of the plan, together with the corridors on both sides connecting the Borgia apartments with the residence of Paul IV and the Villa of Innocent VIII.

This is to be recognized on an etching of the year 1565<sup>92</sup> (representing a tournament in that court), and which Simil<sup>93</sup> gives in his restoration of Bramante's court<sup>93</sup>, corresponding nearly to the glowing words in Burckhardt's "Cicerone"<sup>94</sup> concerning the intended plan: "conceive the transverse wing containing the Vatican Library and the Braccio Nuovo to be removed, in their place being colossal doubled ramps ascending, leading from the lower court into that termed Giardino; replace the side galleries, that only exist in a mongrel scale, transformation, and partly walled up, by those grand forms of unbroken arched porticos and wall surfaces, conceived therefore by Bramante, and this would produce a whole, unequalled on earth. The brickwork with inconspicuous belts and pilasters, that Bramante partly employed and partly desired to use, may easily be surpassed in splendor and effect of details: in its entirety, it was conceived with almost perfected beauty. It is further terminated by a main form, in whose imposing presence the entire middle structure of the later palaces



would have appeared mean and contracted, so great and rich would it have been. We mean that colossal niche with semi-dome, above which extends a semicircular colonnade with a temple-like pediment facade. It is actually only a terminal decoration; but it might be a most effective entrance to a new building.

*Note 92. See his Work.*

*Note 93. Compare plates 1, 2, of Cour du Belvedere. 1503-90.*

*Note 94. Edition of 1860, p. 306.*

*Note 95. On this occasion, note the Roman use of great niches with semi-domes on facades, on of which in Rome, for example, served as the imperial box at the Circus. It is again found on the existing facade of the Baths of Diocletian, etc.; then in the Christian period on the Palace of Theoderic in Ravenna, as a reminiscence on the portals of S. Marco in Venice; in frequent and truly colossal use on the buildings of Islam, especially in the East Indies; lastly with noble effect by Bramante elevated to be the principal motive of the Giardina della Pigna in the Vatican. (See purckhardt, J. Der Cicerone, etc. Note on p. 56. Basle. 1860.).*

A general representation of the plan of the Vatican is given in the magnificent work on the frescos of Pinturicchio in the Borgia Apartments (p. 10), which we give in Fig. 172. Yet it is also stated by the author; (see original text for the Italian quotation). We must differ from this gift in view of the work in question (Compare p. 9 of the same work).

Of technical importance is still the beautiful and gently ascending winding ramp without steps by Bramante in the existing square tower on the Belvedere, whose internal edge is supported by Doric, Ionic, and Corinthian columns, eight of each, where triangular bolsters are inserted between the inclined edges shaped like architraves and the capitals of the columns for receiving and supporting the former, -- a masterpiece of a convenient staircase lying in a circular interior 30 ft. in diameter with a clear height of 13.05 ft. between the edges.

The following notes on the origin of the different parts of the monument may serve for conveniently dating them.

Nicholas V (1450) decided to make Palace Vatican the largest





palace in the world, but only a small portion was completed at his death.

Sixtus IV built the Sistine Chapel in 1473.

Innocent VIII built the Casino Belvedere in 1490, which Bramante under Julius II joined to the Palace by a great court, including the Loggias and the court of S. Damasus.

Paul III built the Library (1585-90), which separated into two parts the great court created by Bramante; into the Cortile Belvedere and the Giardino della Pigna.

Urban VIII (1623-44) added the Scala Regia (Fig. 178) after the designs of Bernini.

Pius VI (1775-95) built the Sala a Croce Greca, the Sala Rotunda, and the Sala della Muse.

Pius VII (1800-20) had the Braccio Nuovo erected.

Pius IX (1846-78) enclosed the fourth side of the court of S. Damasus.

The Palace covers an area of about 609,000 sq. ft., of which about 277,000 sq. ft. fall to the 20 courts, while the number of the halls, chapels, and rooms equals about 1000.

#### 118. Palaces Capitoline.

The second great part is played by the Capitoline buildings of Michaelangelo, even in their present arrangement and shape. Burckhardt believes, that as they now are, they did not originate from a single idea, but that for the lack of anything better, they were rather gradually produced by a varying use of the designs of Michelangelo. This master at least himself added (1538) the broad flight of steps, so essential for the effect of the whole; to him likewise belongs the architecture of Palace Senator with two great flights of steps in two branches, "which with fountains and the two river gods compose a truly unique whole in sculpture and architecture." The colossal order on the facade toward the square, above a high ashlar story, and the bold crowning cornice with the attic story adorned by figures, together with the staircases of the Palace, compose one of the most impressive works of the kind.

Its erection was superintended in 1592 by Girolamo Rainaldi.

The two Palaces of the Conservators were of peculiar design, harmonized with Palace Senator in correct proportions, and



they were arranged to diverge from the ascending staircase; they were detailed in the taste of their epoch, and were certainly executed from the plans of Buonarrotti, even if they are much later. Even their oblique position with reference to Palace Senator must result from its design (Fig. 174, plan). The space opens as at S. Peter's, leaving a greater width at the rear. According to modern theatrical rules, the reverse would be more correct, as expressed in the Scala Regia in Palace Vatican, if an effect of greater depth had been desired. Optical reasons appear to have had as little influence here as at S. Peter's, the adjacent buildings, their location and extent, decided the matter both here and there! The Palace Conservators on the right was already founded about 1450 by Nicholas V, but was rebuilt in 1564-8 by Boccapaduli and de Cavalieri after the plans of Michelangelo. The so-called Museum Capitoline in the building on the left was added under Innocent X.

The effect of the colossal order is interesting in connection with the entablature of the second story, resting on columns and the rich rectangular windows, covered by pediments and decorated by shells. The pilasters stand on pedestals, project strongly, and are accompanied by smooth vertical bands, that are again connected by a head-band beneath the great architrave. The avoidance of an arcade in the lower story and the introduction of the architrave on Ionic-like columns between the great pilasters gives a peculiarly novel effect to the facades. The principal entablature and attic story are proportioned in height and projection to the colossal order, and they are consequently designed with reference to the entire height of the building. It should be mentioned as technically remarkable, that the architrave resting on the Ionic columns is broken in several places, certainly on account of the great and unequal pressures on its ends.

#### 119. Palace Farnese.

A monument that became typical of the succeeding period is Palace Farnese (Fig. 175). Cardinal Farnese became Pope under the name of Paul III, and about 1530, he desired to have his residence on the Campo di Fiore restored by Antonio da Sangallo. The windows of the ground story and some halls





next the court were executed in 1534, when Alexander Farnese was chosen Pope. Among the changes produced by the change of title, the building was carried to the height of the belt, and in spite of the fact that Sangallo had built everything so far according to his own drawings, the cardinal had become Pope, and he opened to the world a competition for the treatment of the principal story of his palace. A similar severe stroke or stab in the heart of the artist here fell on Sangallo, as on the great Brunellesco before, when as a reward and as evidence of confidence on account of the completion of the dome, a competition for the lantern was opened! But to poor Sangallo was reserved the liberty to complete the building under the direction of another! In the competition participated Perin del Vaga, Fra Sebastiano del Piombo, Michelangelo, and Vasari. Michelangelo was very dignified in this matter, did not deliver his design in person, like the others, but sent it by Vasari, excusing himself by illness.

The Pope praised everything, but he gave preference to the work of Michelangelo and affronted the aged Sangallo by placing a certain Melighino, an obsequious creature, who had scarcely a conception of drawing and had not correctly understood his business as superintendent of construction at S. Peter's, on the same plane as the other competitors and by honoring him accordingly.

This occurred about 1544-5, shortly before the death of Sangallo, who always yet retained the hope, that the Pope would change his intention and would leave the completion to him, according to his own designs. But he received the definite command to finally proceed in accordance with the decision of the Pope, and he therefore prepared a wooden model in full size of execution, which was placed on the building. The Pope and all Rome viewed this, there was a general agreement, whereupon Michelangelo was entrusted with the execution.

After the death of Sangallo, there still remained to be finished by the later architects:--

1. The raising of the entire principal story.
2. The completion of the second story next the court.
3. The erection of the entire third story.



4. The construction of the rear facade from the mid-height of the ground story, and the entire central portion from the level of the pavement.

5. The execution of the entire internal decoration.

Paul III desired to entrust the execution of his palace to Michelangelo, who excused himself on account of his age of 71 years and that he knew too little about architecture. Vignola appears to have then assumed the construction from 1547 without important assistance and without supervision by the aged master; yet the latter deserves a share of fame for the treatment of the wonderful principal entablature by his details.<sup>97</sup> After the death of the master (1504), he certainly remained alone, and 16 years after the death of Vignola, Giacomo della Porta constructed the upper story, as confirmed by an inscription (1589). He likewise completed the rear facade about the same time.

*Note 97. Compare Letarouilly, p. 264 of the text.*

More than half a century was occupied by the work on this building, planned as a unity, to which a man of great talent like Sangallo devoted 16 years of his life, but who had to contend with another for place, even if that other were an artist of higher gifts; but he was spared from seeing what the latter made of his design, in which caprice and discord in some parts replaced unity and harmony!

After the dying-out of the male line, the Palace fell to Parma in 1781 and later became the property of the King of Naples; he rented it in 1874 to the French government, which installed there its embassy and its Archaeological Institute. The ashlar on the building partly came from the Colosseum and the Theatre of Marcellus. Michelangelo once intended to arrange a second court next the Tiber and to join this with the Farnesina by a bridge.

Ever beautiful and a model for all later Roman palaces remains the three-aisled columnar hall of the vestibule (Fig. 175), the first convenient main staircase, and the long hall (gallery) in the second story, which the Carracci and their pupils adorned at the beginning of the 17th century with exquisite frescos of mythological character.





Two fountains by Vignola on the Place before the Palace are still to be mentioned, together with the polished gray granite tubs 18.85 ft. long from the Baths of Caracalla. What always charm us on the main facade next the Place are the dignity, the massiveness of the masses of the building, and the grand proportions of the whole, the strength, and the taste in details! It served as a model for many buildings; none of those taking it for a pattern have excelled it!

The front facade exhibits breaks of the masonry in the upper parts, which permit faults in construction to be assumed, that are indeed less to be ascribed to the skilful constructor Sangallo, than to Michelangelo and his pupils, who perhaps omitted to join the walls of the front facade with the court facade by ties, or a layer of beams. The masonry of the facade is executed with well shaped bricks, which have never been coated with stucco in the upper stories.

190 Like Palaces Pitti, Strozzi, Rucellai, and Cancellaria, Palace Farnese remains a landmark in the history of Italian palaces, the later phase of the Renaissance.

#### 120. Some other Roman Palaces.

As another work of the younger Sangallo is to be mentioned Palace Sacchetti, probably built by him for his own residence. "Before all buildings of that time, perhaps the one, that with large dimensions and a certain luxury, is the least peculiar." Purchased after the death of the artist by Cardinal Giovanni Pucci di Montepulciano, he had the structure completed and enlarged by Nanni Bigio, and only later did it come into the possession of the Sacchetti. Executed in visible brick masonry, which was to be plastered, only the bands, the main entablature, the entrance doorway and the window enclosures are of travertine. Door and windows are spanned by lintels; the ground story is high and is fitted with large windows; the second story is a residence story forming a whole together with the mezzanine, over it being again an attic story with a kind of antique cornice with consoles, somewhat too small for the height of the building.

Palace Spada is interesting for the ornamentation of its wall surfaces and shows a regular plan with the entrance into an



inner court surrounded by porticos on but three sides and a perspectively arranged portico in a second court. As at the Scala Regia in the Vatican, the dimensions and distances between the columns diminish towards the rear. The attempt is likewise made to have the stairs in a single flight appear more important than they really are.

The facade has 9 window axes and a high ashlar substructure, above which is a principal story and a mezzanine, combined into one by a band, over these being another high story with a crowning cornice with consoles like the antique. The stone architecture of the facade is severe; but it receives a more pleasing appearance from stucco ornaments, with which the surfaces of the walls of the upper story are covered. Garlands of fruits, medallions, chimeras, figures reclining on the window pediments, tablets with inscriptions, candelabra, and shields of arms alternate with each other. The court facades are treated like the street facades; but beneath the window sill course there occur figure friezes, semicircular niches with figures, together with naked male figures as supporters of the shields of arms on the window piers of the second story (See Fig. 49).

This Palace was built in the time of Paul III by Cardinal Capo di Ferro, ostensibly by Giulio Mazzoni, a pupil of Daniele da Volterra; Vasari praises his merit as a decorator. The Palace later passed to Cardinal Spada, who had it restored in 1682 by Borromini, who added the perspective colonnade along the axis of the second court, which actually has a very remarkable effect, so long as one does not pass through it. Let-arcuilly (p. 529) calls this design a boyish sport, unworthy of true art. It is assumed that this design of Borromini inspired Bernini for his Scala Regia, but this is not conclusive.

Particularly on account of their ground plans on irregular sites are to be mentioned the two adjoining Palaces P. Massimi and A. Massimi, located on a formerly narrow and crooked street, now transformed into a wide one by the so-called Hausmannization of the city of Rome, whereby the original effect of the palaces has been much injured, especially in reference to their magnitude and the effect of their details.





The original building (1455) contained a printing-house: it was destroyed by fire at the taking of Rome by the Constable of Bourbon and was later rebuilt from the plans of Baldassare Peruzzi (1532), who died in 1536 in partial poverty. He had learned in Siena how to make the best of small means, and in the plans for the residences for the two brothers, he strove in the most surprising way for the complete utilization of the ground area, without offending the principles of beauty and suitability. Not easily could such a difficult problem be solved otherwise with so much skill, and not during the rule of any other period of the style; for only the Renaissance was in condition to lend to a building programme of this kind a corresponding expression (Fig. 176).

The Palace of Pietro has a vestibule adorned by columns; that of Angelo remained plain. Built of travertine in the lower story, the most common material was employed in the upper stories, brickwork covered by plastering and stucco, and only the two columns of the loggia are of marble. Elegance and refined feeling prevail in the details and in all parts of the structure and may atone for the lack of solidity in the decorations, and Peruzzi is to be given great credit, that knowing the perishable nature of his materials, he still avoided no expenditure of time or ability in giving his best work.

The loggia already mentioned confirms us in this opinion in particular; its ceiling is entirely constructed of oak, is painted white and is ornamented by attached gilded ornaments, while the pavement is covered by white and red clay tiles. The colonnades in the ground story stand on a base only a few steps high, and on the right and left of them are arranged pilasters with similar continuous and unbroken cornices above them. Above this is built the principal story with rectangular windows, broken pedestal courses and caps with consoles; then follow two mezzanine stories with oblong rectangular windows and the crowning entablature. No other belts subdivide the facade in its height, and the surfaces of the facades are only animated by a uniform treatment of the ashlar.<sup>100</sup>

*Note 100. Letarouilly devotes to this Palace alone 19 plates (290-298) of his great work on account of the beautiful details*



*of the building and the variety of views resulting from the interesting solution of the ground plan.*

The Palace A. Massimi is entirely plain on its exterior and merely the court with its arcades in the lower story and its horizontally covered loggias in the second story affords any architectural interest, which is not small.

As further examples should be mentioned Palace Maccarani built by Giulio Romano and ~~Palace~~ Widoni by Raphael.

#### 121. Barocco Palaces in Rome.

Most of the Barocco palaces were "built as great quarters for the high nobility and the upper and lower servants." They base their entire pride on grand and multiplied stairway designs and on state courts with rich views and outlooks on the gardens.

The best facades among them are shown by Palace Sciarra by Flaminio Ponzio, Palace Barberini by Maderna and Bernini, Palace Quirinal by Ponzio, and Palace Lateran by Domenico Fontana; also Palace Borghese by Martino Lunghi the Elder, with the grand court with arcades on coupled columns (Fig. 177), and Palace Mattei by Madama.

Palace Barberini, as well as Palace Borghese, need a few words yet. On account of its free location in a garden, the former has an unlimited treatment of the ground plan with wings projecting forwards. The enclosed court is wanting in this Palace: in its place is a grand vestibule in two stories furnished with an exedra, in which two great staircases with separate inferior stairways provide access to the upper stories. The adjoining gardens are vast, well subdivided, and are supplied abundantly with water. The show piece in them is composed of the great fountain with the colossal statue of Apollo and a magnificent pine in the background, a picture drawn by every youthful artist visiting Rome previous to forty years since (Fig. 178).

About 1624 and shortly after the time when Urban VIII succeeded to the pontificate, Cardinal Camerlengo Francesco Barberini, nephew of the Pope, commenced the building, which was completed in 1630. Carlo Maderna, Francesco Borromini, and Luigi Bernini supervised the work. The eldest, Maderna, indeed





prepared the first plans, but scarcely took part in their execution. For the two rivals Borromini and Bernini shared in this. The former was a pupil and relative of Maderna; but the Pope favored the latter, who at first wished the two to work together, but soon saw that he had miscalculated to his injury.

Therefore as a result, he assigned to each his own sphere of work, so that Borromini received the vestibule, the ramp, and the rear facade; the chief facade with the projecting wings and the side facades, thus being the larger half, was assigned to Bernini. In the construction of the two principal stairways, the oval staircase was awarded to Borromini and the larger straight one to Bernini.

The model of Bramante in the Belvedere in the Vatican led the later architects to allied solutions.

Forty years after Bramante's precedent, Vignola built the circular winding stairway supported by columns in the Palace at Caprarola, which had a diameter of 31.9 ft., while Bramante only made his 29.2 ft. In the year 1626, Borromini erected his own with an elliptical plan of the interior of the stairway, the larger axis being 30.2 ft. and the smaller 24.6 ft., and finally Ponzio came with a likewise elliptical staircase in Palace Borghese 26.3 ft. by 23.0 ft.

The patronage enjoyed by Bernini, combined with his successes, bore the blame for Borromini's tragical end, who killed himself by a sword thrust. Envy between artists and a too acute feeling of honor at all times never bear good fruit!

For Palace Borghese it may be added, that on account of its peculiar ground plan, it was popularly called the Clavicembalo di Borghese. It was begun (1590) by the Spanish Cardinal Dezza according to the designs of the elder Martino Lunghi, then purchased by Cardinal Borghese, who ascended the papal throne as Paul V, by whose command Flaminio Ponzio extended the building to the Ripetta, while Carlo Rinaldi added the garden and adorned it with three eccentric wall-fountains.

From Ponzio came the peculiar design of the doorways in 10 successive rooms, which makes possible a perspective of the richest kind in spite of the broken facade ending with a



view out on the mountains and a fountain built against a neighboring house beyond the public street. The great and beautiful court with double columns and the view towards the garden will remain an architectural picture of grand effect. (Fig. 177).<sup>101</sup>

*Note 101. The Renaissance buildings in Rome are contained in Letarouilly, P. Edifices de Rome Moderne, etc. Paris. 1860.*

## 122. Sicilian Palaces.

The palaces in the three principal cities of Sicily, Palermo, Catania, and Messina, almost entirely belong to the later phase of the Italian Renaissance, and the façades scarcely offer anything new. The plans show enclosed courts with and without porticos on columns or piers.

In Messina is to be mentioned Palace Avarna, in Palermo Palaces del Monte, de Cuto, Constantine, Comitino, Cattolica, Gerace, and others. Information concerning them is given by the work mentioned below with its carefully executed drawings.<sup>102</sup>

*Note 102. Hittorf & Zante. Architecture Moderne de la Sicile. Paris. 1835.*

## Chapter 12. Villas.

"While every other possession causes toil and danger, fear and repentance, the Villa yields great and honorable enjoyment; the Villa remains there ever true and friendly; dwell in it at the right time and with love, then will it not only satisfy you, but it will add return to returns. In the spring, it makes you joyful by the green of the trees and the song of the birds; in harvest, it yields for you fruit a hundred fold for slight labor; no melancholy can enter it during the entire year. It is the gathering place of good and honorable men; nothing secret or deceptive occurs there; all see everything; here are no judge and witnesses needed; for all are peaceful and good to each other. Hasten thither to flee from the pride of the rich and the infamy of the bad! Blessed life in the Villa, unknown good fortune!"

(From L. B. Alberti's *Trattato del Governo della Famiglia*).

## 123. Country House and Summer House.

Just as in palace architecture did Florence precede in villa architecture the remainder of Italy. There first again awoke





the love of the cultured for rural life, an inheritance from the antique period, already before the middle of the 14<sup>th</sup> century, while in the North the nobles still dwelt in the mountain castles, the higher orders of monks in their walled monasteries, and the rich citizens in the city for the entire year.

"Around Florence lie many villas in the crystal clear air, in the serene country with a splendid outlook; there is no fog, no destroying wind. Everything is good, as well as the pure and healthy water, and many of the numberless buildings are to be regarded as princely palaces, splendid and costly."

Men distinguished the country house for longer stay and for agriculture, where the estate must supply everything, and what one could not himself consume was sent to the market; it was of one story and of simple construction. Then the summer house, the suburban villa, located near the city or in the suburb, serving for transient or very brief occupancy. It must make a more cheerful and attractive impression, for which more stress was placed on its art forms and a site on a slope was preferred. The extravagant and capricious were permissible for this species of residence; much might be accepted in the country, that would not be allowed in noble and city life.

*Note 103. Our recent architecture is less scrupulous in this.*

Villas with external porticos were regarded as more beautiful than those with enclosed facades, and towers were added with favor as a relic of castle architecture. Symmetry was abandoned in them, "where otherwise the Renaissance never counted on the unsymmetrical as a picturesque element, and only so much of this was used as might be unavoidable." And how much better is it to proceed from the natural requirements, than by the modern mania at the cost of meaning and understanding, as well as the logical development of a ground plan and of sound construction, wishing to secure the picturesque at any cost? Much that we wonder at today in old buildings as "picturesque" was produced by additions and was not intended by the first architect; the ancients then made a virtue of necessity, and we create without virtue merely a necessity!

Greater importance was given to the problem by the erection of the building in two stories, which required a larger stair-



stairway; the service was then placed in the cellar story and the stores in a "hidden upper story with dormer windows"

Serlio's projects for villas mostly show isolated separate rooms, only accessible from a central hall. Palladio and Scamozzi also adhered to this arrangement of a central hall, frequently indicated externally by a dome and lighted by a skylight. If the hall was made oblong, then a sideboard and a fireplace were opposite each other at the ends.

#### 124. Arrangement of the Country House.

The farmhouse idea could be entirely omitted in the country house, when it served for permanent occupation by the landlord, who had become a noble or citizen, and who had no city property; but it might also be chiefly arranged for the manager, with the reservation of a few rooms to be kept always ready for the owner during his possible visits, which then received better furnishings and a preferable location, or if in very small dimensions, these country houses merely served for the tenant or peasant in the form of plain, grouped structures of usually picturesque effect. The special nature of the site, the particular requirements for the position of certain parts of the building, the heights fixed for them, the arrangements of openings for light, doorways and gateways, as well as that of the space required, etc., naturally produced here a certain variation in the forms of the exterior.

According to the nature of the ground and the climatic conditions of a province, these villas, vignas or tenutes bore their special stamp; they are differently formed on the slopes of the Alps, than in the valleys of the Arno or Tiber, or on the Gulf of Naples.

Evidence of this is given by the Country House near Bellinzona and a Tenuta outside Porta Angelica near Rome. There is the high German tiled roof over a massive stone structure in several stories, and here is the flat roof with an open portico, tower, and a main building in two stories. (Figs. 179, 180).

The construction of an open loggia on the roof is again common to the country houses on the slopes of the valley of the Arno and that of Upper Italy; excepting that it is there of greater extent and less enclosed. (Fig. 181).





By location, picturesque grouping, interesting outlines, and simple architectural forms, is the moderately large Country House near S. Gervasio one of those typically beautiful ones, such as may still be seen by hundreds outside the gates of the larger Italian cities. The groups of trees surrounding the building contributed no little to the effect, as well as the fortunately not too conventional arrangement of the gardens, whose charm is ever enhanced by small fountains.

#### 125. Suburban Villa with Park and Gardens.

The villas of the great and the wealthy of that time are not villas in our sense, but they are garden palaces in magnificent parks and lawns adorned by art-works, intersected by streams and cascades, which alternate with small ponds, fish basins, and grottos, rich beds of flowers, fountains of marble and of bronze, comfortable seats among them, with shady walks; well-chosen points of view succeeding in the most beautiful variety. The interiors of the buildings are furnished with every city comfort and convenience, and they are intended for an existence differing from that in the city only by location and the greater freedom of the life.

#### 126. Early Renaissance Villas.

The best of the Florentine villas of the Early Renaissance, according to Eurchhardt, were voluntarily destroyed in 1529 before the Spanish siege, and whatever otherwise remains from the 15th century has been rebuilt and extended, and no longer shows its original form.

#### 127. Villa Careggi.

As a first example may be mentioned Villa Careggi, built by Michelozzo, according to Vasari's statements. Master Lorenzo must have been the executive architect. The Composite capitals indicate in the court the year 1430; on the great fireplace in the upper story is the date 1462. The building was destroyed by fire in 1530, but it was soon restored; sold in 1779, after various changes of ownership, it came into the hands of Segre, member of parliament in Rome. The exterior is chiefly characterized by a defensive gallery with battlements, which gives the building more the appearance of a mediaeval fortress. The stone-cutting is limited to the most modest



degree; the surfaces of the walls are stuccoed and merely the angles are strengthened by ashlar.

The Villa is entered from the garden, first passing into an irregular court with porticoes on two sides, from which a plain straight staircase covered by a tunnel vault leads to the second story, which in addition to a number of rooms contains two halls, one of which still has the great fireplace mentioned and its old wooden ceiling. The ground plan is irregular, with two projecting narrow wings, which terminate in the ground story in triple-arched vaulted garden porticoes, over which is one of the famous loggias, open on three sides and supported by Ionic columns, in which Lorenzo the Magnificent held his academic sittings. The ceiling of this loggia was painted by Poccetti or in his manner with grotesque ornaments in the most graceful way; the wooden architraves on which the roof rests are supported by 18 elegant Ionic columns, and in spite of the peristyle arrangement of the columns, all their capitals have the surfaces of their volutes parallel to each other. Special angle capitals thereby were indeed unnecessary; but they do not therefore appear more beautiful. <sup>104</sup>

*Note 104. A misunderstanding is to be cleared up concerning the Villa mentioned; in the work "Palastarchitektur von Oberitalien und Toscana vom XV bis XVII Jahrhundert (Toscana) by J. C. Raschdorff (Berlin, 1888), there is shown on Plate 61 a "Villa Careggi" with the subscript "Architect unknown". It is a picturesque and very near structure 90.2 by 43.6 ft. in dimensions, which contains 4 rooms and an open loggia in the ground story. A text for this place is given on page 18, which evidently does not fit the illustration, but rather the true Villa Careggi shown by me.*

*For in Raschdorff is stated with a reference to A. von Reumont, "the Villa has prominent battlements and an inner square court", -- of all which nothing is to be seen on Plate 61. Likewise the unknown architect of the plate is changed in the text into the well known Michelozzo. I confirm this from a correct study. The building suffered somewhat by a well known earthquake a few years ago; but it was again restored by its present owner Segre, who is well aware of his treasure, cares*





for it, and maintains the wonderful gardens in the most beautiful manner, even seeking to extend their area. The loggias and the death chamber of Cosimo the Elder and of Lorenzo are piously preserved. The gardens and Villa are now closed; but the art-loving owner willingly permits the representative specialist a glance into his sanctuaries, doubly consecrated by their historical remembrances and the grandeur and beauty of the gardens and landscape, which overlooks the Arno as far as the Cathedral dome of Florence.

With Ionic capitals used in the wrong direction also appears the already mentioned cloister of the Monastery of S. Maria della Quercia near Pagnara and the little cloister in the Certosa near Florence.

#### 128. Villa of Giovanni da Medici.

The Villa of Giovanni da Medici, located on the steep slope of the mountain of Fiesole, is more remarkable only on account of its beautiful situation and for the separation of its two chief parts, compelled by the location on the mountain slope, and further on account of the historical recollections connected with this building. It was built in 1458-61, sold in 1671 by Cosimo de Medici, then passed through many changes and is now in the possession of the Englishman Spencer.

#### 129. Villa Reale in Poggio a Cajano.

Entirely preserved in its original condition is Villa Reale, formerly Villa Medici, in Poggio a Cajano near Florence, built by Giuliano da Sangallo (1445-1516). On a substructure 137.7 ft. square, surrounded by porticos 13.2 ft. wide in the ground story, rises the principal story with in the centre a hall 34.4 ft. wide, 64 ft. long, and 42.6 ft. high, covered by a tunnel vault, receiving light from the two ends, and around this are then grouped the other rooms. These are arranged in two wings of equal size projecting from the central hall, one of these being adorned by a portico of 5 intercolumniations crowned by a pediment. The exterior is kept plain; the wall surfaces are covered with stucco and are animated by rectangular windows, then terminated by a strongly projecting cornice with rafters. The portico mentioned is distinguished by colored ornamentation, and its interesting capitals are like Ionic,



while the terra cotta frieze contains small white figures with yellow garments on a blue ground, executed by the Robbias, and the tunnel vault behind the arcade has a decoration by white, blue, and golden colored tiles with the same subdivision in relief as the little tunnel vaults at the Sacristy of S. Spirito in Florence.

Somewhat dry and defective in scale is the ornamentation of the tympanum of the pediment; the arms of the Medici with doubled bands, but for all this, the extended Villa, taken as a whole in connection with the magnificent gardens and the grand park in the country between Florence and Prato, is wonderfully beautiful in its effect, indeed just on account of its simplicity in rich nature.

Here is the true conception of the "picturesque", that is indeed based on oppositions, not yet misunderstood.; a competition of the architectural with the Divine nature is not assumed, with battlements, dormers, pinnacles, and towers, in opposition to the inexhaustible wealth of form of the latter. A villanash, as shown by the most recent architecture, composed of the bay windows, gables and turrets of houses in mediaeval fortresses, was unknown then. Men, who desired to live outside fortified walls, longed for light and air and recognized the model for dwellings only in similar architectural conditions, as the antique world had offered. <sup>106</sup>

*Note 106. Charmingly in this sense, the pupil of Wagner, Leopold Frauer, expresses himself in the text of his Sketches, Designs and Studies:-- "A Villa" (Vienna, 1899), p. 39, 40:-- "For heaven's sake, why have you then built a German Renaissance box here?" -- "Yes, it is indeed picturesque," we are repeatedly told, "one must indeed strive for a harmony of the building with nature; how can this be better done, than by the greatest possible number of free endings?" Go into the studio and take in hand the drawing board with the facades. "This gable is from Peller's House in Nuremberg, the motive of the entrance is taken from an old fortress gate of Würzburg, the original of this turret stands in Rothenburg;" the architect explains, -- "all architecture of the highest rank!" --, and so forth. The little work contains much, that is eccentric, but also much*





*that is original and well conceived, and it is advisable to read it as well as other "documents" of German art" with their profound sayings.*

The plan of the upper story is still the original one, but the ground story with the stairway has been changed. Remarkable in the ground story is a connecting staircase on consoles, that led to the apartments of Bianca Capelli.

Notable for its time is considered the tunnel vault of the hall with its rich coffers, which was strengthened by 4 stiffening arches above it. Pope Leo X had the walls of this hall adorned by frescos, in the execution of which Andrea del Sarto, Francia Bigio, Puntormo and Allori were employed. <sup>107</sup>

*Note 107. Von Geymüller notes in his great work on Tuscany, that the so-called "baluster" was here first extensively used, while in the period before Giuliano da Sangallo, the little column was always employed.*

The colored internal decorations are the work of the already mentioned Francia Bigio: white and gold predominate therein, blue and red being only grounds for the panels; only the shells of the egg-and-dart mouldings are usually gilded. Visible from afar is the massive tower with defensive gallery and flat, strongly projecting roof, which overlooks the simple, large building and its terraces.

### 130. Some other Villas.

Located in the vicinity of this Villa is Villa Petraja, likewise a simple building, which was in the 14<sup>th</sup> century in the possession of the Brunelleschi, was restored by Buontalenti in 1575 for Cardinal Ferdinando de Medici, and it was later a favorite residence of King Victor Emanuel. Here stood likewise the favorite tree of this king, the evergreen oak 400 years old, between whose branches a staircase extended to a wooden platform. From the period of the residence of the King also dates the covering of the inner court by a roof of glass and iron.

Without special architectural value or charm is the neighboring Villa Castello, though with a so much more beautiful park. This and the Villa previously described each contain a magnificent fountain of white marble by Tribolo and bronze figures



by Giovanni da Bologna. That in Petraja shows as the principal figure a beautiful nude maiden, wringing out her hair, while in Castello a grotto is notable, which exhibits various animal forms in bronze above a marble fountain basin decorated by fishes.  
108

*Note 108. For the three royal villas, Poggio a Cajano, Petraja, and Castello, free permits are to be obtained at the office of administration in Palace Pitti. A visit is profitable, interesting, and may be made without taking much time. No young architect should fail to visit them.*

To be added are still the Villa Poggio Imperiale outside the Porta Fomana near Florence, which received its present state chiefly from the wife of Cosimo II, Magdalena of Austria. The exterior is here likewise simple, the interior not being accessible at this time on account of a boarding school for girls therein.

On the western slope of a hill on Bellosguardo near Florence lies Villa Borgherini, built by Baccio d'Agnolo in 1502, in plan a rectangle of 118 by 82.6 ft. with an inner court, enclosed on two sides by vaulted porticos 14.75 ft. wide, around which are arranged the rooms, which are all covered by mirror vaults with intersecting compartments.

Further to be mentioned is Villa Salviati near Florence, produced by additions and by rebuilding a castle-like design about the end of the 15th century. This has as its ground plan a projecting court with columns, enclosed on two sides by walls and on the other two by buildings.  
109

*Note 109. Compare Geymüller; Villen in Toscana, p. 5.*

About five miles from Florence is Villa dei Collazzi, rebuilt in 1534 by the Dini, only two-thirds of which was erected, according to a drawing of Michelangelo. It forms a rectangle of 181 ft. length and 123 ft. width with projecting side wings, between which is a portico with 7 arches and a great terrace with ascending staircase in two flights. The two-story building is plain and severe in its architecture, with simple windows, ashlar quoins at the angles, stuccoed surfaces of the walls, cornices with rafters, and red tile roof, like all previously mentioned villas.





A graceful effect is not to be denied to the building, being produced by the open porticos extended through two stories, and this may indeed be regarded as the perfected type of Florentine villas in the 16<sup>th</sup> century.<sup>110</sup>

*Note 110. A good publication of it may be seen in Bellotti, G. Villa dei Collazzi a Giogoli. Florence. 1893.*

131. Villas of the High and of the Late Renaissance and their Gardens.

In the villas of the High and of the Late Renaissance, there recedes somewhat the truly picturesque motive of simple masses of the building within a rich arrangement of parks and gardens in a favorite tract in a fertile country, rigid wall masses contrasted with the moving and ever varying outlines of the groups of trees, architecture assuming a more pleasing and richer form, which must be followed by the designs of the gardens likewise.

The first impulse toward artistic treatment of gardens may well have been given by Bramante with the great court of the Vatican, whose difference in level was equalized by the double flight of steps with grottes. The arrangement of gardens on architectural lines, which must be in harmony with the building, became the highest law, and it remained a branch of architecture and a specialty of the architect. A state garden, protected against wind and weather, surrounded by terraces and sunken, adorned by fountains, vases and statues, which must stand in the closest connection with the building, enclosed by balustrades and joined by flights of steps, which were of themselves capable of the richest architectural development, surrounded by imposing evergreen vegetation (trees with ordinary and with needle leaves), together with the view of distant mountains, villages, cities, seacoast, embosomed skilfully in a valley or in lower ground, animated by a stream, flowing always in a straight line, swelling into basins and stored for cascades, -- these are the passive constituents of the Italian garden, which does not wish to artificially imitate free nature with all its accidents, as for example, the "English garden" attempts, "but desires rather to make nature obey the laws of art."



## 132. Villa d'Este near Tivoli.

One of the richest examples of this kind is indeed afforded by the Villa d'Este near Tivoli, whose ever beautiful design was already executed in 1549 by Pirro Ligorio, who also erected for Pius IV the Villa Pia in the Vatican gardens (1560), beside which may be added a smaller design of the same period in the beautiful garden of Palace Colonna in Rome.

The garden of Villa d'Este covers a tract of about 399,000 sq. ft., 698 ft. long and 571 ft. wide, and it is divided into a lower part containing three pools and an upper one developed into great terraces, on whose uppermost level rises the palatial Villa with its front and side buildings and a simple inner court with piers. Only its southern side next the garden is richly and interestingly treated.

A faithful representation of the entire design is given in the journal mentioned below, according to which the principal facade is shown in Fig. 183.<sup>111</sup>

*Note 111. Allg. Bauz. 1867. p.2, pls. 2,3,4. Measured and drawn by Adolf Gnauth and very minutely described by E. Paulus in Stuttgart.*

## 133. Villa Pia.

A papal garden residence with a front pavilion is Villa Pia in the Vatican gardens, begun by Paul IV and finished by Pius IV, according to the designs of Pirro Ligorio (1560). Standing on a site in two levels, it shows on its main axis a loggia with fountain beneath it; on the right and left of this, two curved ramps lead to two vaulted entrances, which open into an oval area, on whose longer side stands the Casino proper with a vestibule, an oblong hall and two subordinate rooms with the added stairway. The rooms in the upper story are less important and correspond in plan to those of the ground story. One side room, measuring 11.8 x 21.63 ft. in the clear, is extended above the roof as a loggia with two and three arches on the ends and sides.

The fountain beneath the front loggia is decorated by satyrcaryatids, and the roof is shaped like a low tunnel vault intersected by two wide gables. The vaulted entrances are imitated from small temples; the facade of the Casino in two stories





too richly covered by stucco ornaments, like those of the other ornamental buildings. The internal apartments are likewise decorated by stucco and paintings in the richest way, as shown by the sketch and details in the work mentioned above. (Simil).

#### 134. Villa Monte Imperiale near Pesaro.

203 Villa Monte Imperiale in Pesaro was designed by Girolamo Genga (1528 or 1530) for Duke Francesco Maria della Rovere of Urbino, but it was never completed, and it still has a powerful effect in its ruinous condition. The building follows on three levels the natural ground and shows below an imposing portico-story, over this being an enclosed facade with pilasters. 114 Eleanor Gonzaga had it built for her husband Francesco Maria "a bellis redeunti animi ejus causa", according to the existing inscription. Before this, Alessandro Sforza had built himself a country house, the corner stone being laid by the Emperor Frederick III. (1469). Under the Rovere, the upper rooms were adorned by stucco ornaments, majolica tiles and frescos, by Camillo Mantovano, the brothers Dossi, Angelo Bronzino, and Raffaellino del Colle. Some rooms are painted in the style of Giovanni da Udine. Fig. 184 gives a representation of the great hall, decorated by landscapes and cupid figures.

Note 114. In Burckhardt's *Geschichte der Renaissance in Italien* (Stuttgart. 1878. p.230, 231) is to be found a representation of the Villa from a drawing in the Archives of the Municipality in Pesaro, contributed by Herdtle.

The exterior of Villa Imperiale, now belonging to Prince Albani, stands gracefully in its simple forms in the landscape (Fig. 185). Just the quiet masses, the great and interesting outlines, which make the building effectively picturesque in nature, in the landscape surrounding it, and exhibits what I desire to have understood as "picturesque architecture", contrary to the false conception of many modern architects, who have forgotten, that such an effect can only be realized by contrast.

#### 205 135. Villa Lante near Bagnaja.

The first plans for Villa Lante in Bagnaja were made by Cardinal Raffaello Sansoni Fiaro in 1477. Nicolo Ridolfi from Florence, fifth Cardinal Bishop of Viterbo, had a part of the building erected, but his successor Bishop Gualteri rented the house



and garden. Giovanni Francesco Gambara, sixth Cardinal Bishop, completed about 1564 the lovely residence and had the buildings ornamented by paintings, mostly by the hand of Antonio Tempesta. Cardinal Alessandro Damasceno Peretti or Montalto, the nephew of Sixtus V, became its possessor in 1588. He built the second Casino and furnished it with a great supply of aqueducts and gardens. Pope Alexander VII gave the property to the Duke of Bonmarzo of the Lante family, which still owns it and makes it a summer residence regularly.

It is assumed without sufficient certainty, that Vignola was the master of this lovely creation, for the reason indeed, that he built Palace Caprarola near it. The assumption expressed by Percier and Fontaine, that the Villa was the work of several skilful architects employed at different times for its completion, must be more correct.<sup>115</sup>

*Note 115. Compare the publication, not always correct in all parts; Choix des plus celebres Maisons de Plaisance de Rome et de ses Environs (Paris, 1809), and Fig. 186, which gives the general design of the Villa from a photographic view.*

The plan of Villa Lante is entered through a high arched gateway decorated by columns, first passing into a flower garden gleaming in a thousand ways with the splendor of color of a luxuriant Southern flora, which is architecturally subdivided into regular beds enclosed by box borders and separated by finely graveled walks. On the longitudinal axis of the plan, the centre of this garden is ornamented by a rich fountain of original design in the centre of a great square basin enclosed by balustrades (Fig. 186). Four small bridges symmetrically opposite each other lead across this to a second circular basin, in the centre of which rises an octagonal platform on which stands a group of colossal figures. Four slender nude youths, between which two pairs of lions are seated, support the arms of Montalto, five mountains with a golden star over them (Fig. 187). Unconstrained, alive, beautiful in outlines and poise, these forms combine in a peculiar way and hold with one hand the plate with the emblems of the arms; the water springs in a full stream from the ground against the under side of the plate and falls down from the points of the star over the





group; the lions spout water into the round basin, like the masks on the pedestal.

In the great square basin, divided into four parts by the bridges, there are at the level surface of the water four charmingly wrought marble ships steered by geniuses, the little ships being themselves richly laden with flowers, mostly blooming oleanders. The pedestals of the balustrade support vases, pine cones, obelisks, etc., but unfortunately time has destroyed their originally minute figure ornamentation. The groups and substructure have taken from the water a deep bronze-brown tone, while the remaining architectural parts have chiefly remained a light yellow and are partially covered with moss; to this is added the rich colored ornamentation of flowers, the reflecting surfaces of the water, and the silvery streams of the fountain jets, -- which together afford a ravishing view.

Access from the flower garden to the first terrace of the park is by two broad flights of steps, which lie along the longer sides of the two residence pavilions (Casinos), made entirely similar in their architecture, and by two narrow paths bordered with box, that intersect in zigzag form the green lawn on the slope lying between the flights of steps. The Casinos exhibit on the level ground beyond the garden, open, triple-arched, vaulted halls, rich and beautifully painted, an example of which is given in the adjacent Plate, while the upper story is animated by double pilasters, blind niches with rectangular windows, which support segmental and angular pediment caps. The frieze of the principal story has small oblong rectangular windows; the roof is hipped in form and is covered by an enclosed belvedere. The sections of the architectural members are rather flat and incorrectly executed, and the faces are entirely constructed of a gray tufa.

Interesting and finely preserved are the high and airy apartments of the principal story; stucco ceilings with rich paintings, friezes with high reliefs and paintings, and ornamental mural decorations alternate with each other in the most varied manner. In the shade of great plane trees, the fountain rises abruptly from the first terrace, pouring first from a Nymphaeum, the highest point of the park. Between two open halls (Fig.



(Fig. 188) is constructed a semicircular niche of stone, richly covered by vines and shrubs, from which the water, shaded by overhanging branches of trees, falls into a great collecting basin. This feeds a shell fountain surrounded by box hedges and benches, throwing a jet high into the tree tops. Thence the water runs in a straight line in a channel ornamented by a border with repeated scrolls, that ends in the form of a colossal craw-fish (gambero) with a flat basin between his claws, pouring his water into the great semicircular fountain ornamented by reclining river gods. (Fig. 189). This feeds a quietly flowing bird-tank 23 paces in length, which is flat and trough-like, extending between two rows of magnificent old plane trees, again supplying with water a lower large circular fountain with charming water effects. Flights of steps between the basins connect the higher and lower grounds.

This place is the most splendid of the entire park; against the heights are the thick-leaved majestic trees with their low hanging branches glittering with emerald green in the sunshine, between them being visible only small spaces of deep blue air; beneath are the fountains and water magically lit up by the gleaming sunbeams; toward the plain is the view of the flower garden with its magnificent fountain with statues, and a view through the portal of the picturesque white-gray houses of the little city with their flat brown tile roofs, and in the distance is the reddish Campagna with Monte Fiascone and behind it Monte Argentario with its wonderful outlines. The design executed with so much taste and understanding is surrounded by extensive woods, that are intersected by walks and are pleasantly animated by rest-seats, basins for swans, and those for bathing. The forest is chiefly composed of evergreen oaks; next the fence on the mountain side stand cypresses, which belong with the most beautiful in Italy. <sup>116</sup>

*Note 116. Compare the Author's Essay in Zeit. f. Bild. Kunst, Vol. XI (1876), p. 292. Die Villa Lante bei Bagnaja und das Kloster Maria della Quercia.*

Not easily will be found a more instructive example of an Italian design for villa and garden for a relatively limited area, than here in the Cimino mountains. What especially





charms as nontranscends is the magic of trees and flowers with the jets of water around us, but which can scarcely have been invented by the builder. Things looked differently 400 years ago: young trees, new buildings, all well cared for, -- the vegetation is now at the highest climax of maturity, but the buildings are old and ruinous, the artistic design and the art works are in a decadence, just as everything created by human hands becomes in time!

If we today forego enjoyment of everything imposed by nature, silence art-works and cannot revive again in spirit the participation of these in their former condition, thus may we recognize the views of artists thereon and practice unjust criticism; and if it be said; "The cypresses of the Villa d'Este assuredly form architectural motives and much disappeared with them;" it is forgotten that this was not so originally, and that the design must have maintained itself against the criticism of contemporaries.

#### 186. Villa Farnesina in Rome.

In Villa Farnesina we meet with one of the simplest designs in general, with porticos in the ground story and halls in the upper story. A hall with 5 arches between piers extends between two strongly projecting wings (Fig. 180), that contain a normal and a mezzanine story, while the portico comprises the height of both. The surfaces of the facade are subdivided by pilasters; the building is terminated by a high principal entablature, consisting of architrave, frieze and cornice with modillions, and the wing next the Tiber is animated by a belvedere on the roof. The otherwise plain exterior was intended to be painted. The frieze is perforated by small square windows, between which cupids and candelabras support heavy festoons. The facade is distinguished by elegance and grace. "Non murato ma veramente nato", says Vasari of this charming building, that contains in its interior the most magnificent decorations of the entire Renaissance; paintings by Raphael, by Giulio Romano, by Sodoma, etc., some of them restored by Carlo Maratta. Especially beautiful are the ceilings of the portico with the lunettes (see the adjacent Plate). The Villa was built by Baldassare Peruzzi in 1509 at the order of



Agostino Chigi. Here Chigi received Pope Leo X, various cardinals, and the most famous men of his era.

Note 117. See the general plan in Letarouilly, p. 238 and pls. 100-102.

137. Villa Madama near Rome.

The unfinished Villa Madama near Rome was built from the drawings of Raphael by Giulio Romano at the command of Cardinal Giulio de' Medici, later Pope Clement VII. The stucco ornamentation and frescos were executed after 1520 by Giulio Romano and Giovanni da Udine. This is about the history of its architecture according to Vasari, to which should be added; after the death of Leo X (1521), the building remained unfinished; Cardinal Pompeo permitted the Villa to be burned, and Villa Madama being laid in ashes in May, 1527, Antonio da Sangallo began to rebuild it according to changed designs; but it still remained unfinished. The building was hardly commenced before 1530, when the Pope had his hands free again. Pope Clement died in 1534.

Note 118. See Vasari, G. *Lives of the most distinguished Painters, Sculptors and Architects*. p. 179 et seq. of German edition. Vol. 3. 1866. 1. Stuttgart. 1843.

Jahn first recognized the plan of Antonio da Sangallo among the original architectural drawings and speaks of it in the annual mentioned below. Redtenbacher has discussed it thoroughly in the journal mentioned below, placing the two plans side by side, those of Raphael and Sangallo, and he comes to the final conclusion, "that it would be hard to decide which of the two plans would be the more beautiful. Both have their advantages. Raphael's plan is a stroke of genius, clear and simply arranged. What Antonio da Sangallo added to the existing portion of the building on the basis of Raphael's plan or changed therein permits the recognition of an architect of high rank, who deserves all consideration." We refer to these two ground plans with an expression of regret for the ruin of this wonderful creation!

Note 119. *Jahrbücher d. Kunstwiss.* Vol. 2. p. 143.

Note 120. *Zeit. f. Bild. Kunst.* Vol. XI (1876). p. 33-40.

Note 121. In Burckhardt's *Geschichte der Renaissance in*





*Italien* (Stuttgart. 1878. p. 225), an appeal is made to Serlio, (Book 3, p. 131), and it said; "that these genuine facades and plans far exceed the building as erected; beside the portico with 3 arches in the lower story, there is also a niche on each side."-- The reference to p. 131 is incorrect, should be 121, and the text contains an inconsistency, for it means indeed, that only one of the ends contains a niche. But Serlio himself says, that the second niche was omitted by him for the sake of symmetry, that only one niche was built, on the end next the mountain, that the one on the other end was left out on account of the arrangement of the rooms, (See Italian quotation in original text). The other statements concerning the upper story and the niches on the facades agree with those of Serlio. But the two plans of Raphael and of Sangallo published by Redtenbacher do not harmonize at all with the plans of Serlio, and they are indeed Serlio's own work.

### 138. Other Villas.

In the court and garden respectively of Palace Giustiniani in Padua, there stand adjacent a Casino and a Garden Pavilion, which we reproduce in Figs. 191, 192, from our own drawings, buildings formerly built by Falconetto for Luigi Cornaro in (1528), entirely distinguished and noble in their general appearance and in details. Of the 5 windows in the upper story, three are now walled up and filled by plaster figures.

The architecture of the Casino is very beautifully developed with the small octagonal hall in the centre, surrounded by 4 rooms, the stairway, and passages to the 3 windows and the main entrance. The loggia with 3 arches in the upper story is airy and good in its proportions, as well as the arcades forming the separation between the court and garden. The interior is ornamented by small coffered vaults and grotesque paintings, which at the time of our drawing were preserved in the best manner, but have suffered since, where the rooms are rented. Through the arched portico of the street facade a narrow passage leads to the court, in which would not be expected such Renaissance works, which unfortunately are going to destruction.

*Note 122. Compare also the publication of the two buildings*



*in Lasius, G. Die Baukunst in ihrer Chronologischen und Constructiven Entwicklung. Darmstadt. N. D. Pl.G.a.7.*

The peculiar buildings of Pope Julius outside the Gate Porta del Popolo at Rome were commenced at the beginning of the 16<sup>th</sup> century on the arrangement of Cardinal Antonio Fabbiani di Monte by Jacopo Sansovino and Baldassare Peruzzi. The Cardinal died in 1523; Peruzzi survived him scarcely 3 years, and thus the work was interrupted. The nephew of the Cardinal was elected Pope in 1550 as Julius III, took up the work again, first asked Vasari, and then Michelangelo for their opinions, finally selecting Vignola as his architect. Since he died after a reign of 5 years, the abandoned buildings fell, their art-works were removed and scattered. This misuse stopped under Pius IV, when these buildings were assigned as a residence for cardinals, ambassadors, and princes, before entering the city. After him, Paul V retained this arrangement. They again fell into ruin, when the imperialists and the Spaniards arranged a hospital there in 1744. Clement XIV had them renovated and Pius carried on the work of restoration further. To make the empty buildings useful, Leo XII placed a veterinary school in them, but this was removed by Pius VIII. Under Pius IX, the buildings serve, as I myself found, for barracks for the papal dragoons, (1866), and when these left the place, a Swiss subaltern was placed there as a guard of the whole. The Italian government has now installed there the Etruscan Museum, and it has built in the court a doubtful Etruscan wooden temple with a covering of terra cotta.

2.14 The plan first shows a rectangular court, formerly a garden 90 ft. wide, adjoining which is a vaulted semicircular portico, which in a rather capricious way is placed next the street before a Casino, which contains in the ground story the well known two great halls with their beautifully painted and stucco ceilings. A ramp leads in a semicircular space to the upper story, which is divided like the lower story. Opposite the semicircular portico is arranged a Pavilion with side rooms, for the sole use of the Pope. Two quarter circular flights of steps lead from the Pavilion down into a lower lying garden with a Nymphaeum, which is separated from another and higher ornamental garden by a narrow two-story transverse building.





All the buildings and gardens are arranged symmetrically about a straight main axis, and the whole may have furnished a costly residence for rest <sup>123</sup> in the time of its splendor, not far from the Tiber, in connection with the Vigna at the corner of Via di Ponte Molle and the little votive Church of S. Andrea.

*Note 123. A tolerably exhaustive publication of this Villa is to be found in Letarouilly, p. 421-470 and pls. 199-221; also in Percier & Fontaine, pls. 46-49.*

Among the designs near Rome, there are to be made prominent as country villas; Villa Aldobrandini and Villa Mondragone; as suburban villas; Villa Borghese and Villa Medici.

Villa Borghese was built in 1605 by Paul V from the designs of Giovanni Vasanzio (Giovanni Fiamingo), the garden was planned by Domenico Savino di Monte Pulciano and was beautified by the Roman architect Girolamo Raicaldi, while the fountains were executed by Giovanni Fontana. The large Casino has on the main front two projections with an open hall of 5 arches extending through one story, to which a flight of steps leads on two sides. The wall surfaces are richly decorated by stucco ornaments; niches with figures and medallions animate them; two belvederes rise above the roofs, thus giving the building a cheerful and elegant character. The interior contains the costly collection of antiques and paintings belonging to the Prince.

The garden and park are here no longer connected; the axial arrangement is omitted: the separate buildings lie scattered between groups of tall trees, intersected by shaded paths leading to little temples, roofed semicircular seats, enclosures for animals, ponds, little islands with fanciful buildings, fountains, etc. A living Pavilion for the family, a portion ornamented by antique fragments, a chapel with added rooms, bird-houses, a long hippodrome, a pheasantry, dwellings for gardeners, and meadows with wild plants, adorn the grand scenery. English gardening demands admission here.

The Villa Medici is arranged on nearly the same plan at the old city wall of Rome, and it was built in the middle of the 16th century from the drawings of Annibale Lippi by Giovanni



Ricci da Montepulciano, whom Julius III made Cardinal in 1551. The building was enriched with antiquities and enlarged by Cardinal Ferdinando de Medici, a son of Cosimo I. The main building is of rectangular plan with a vestibule open towards the garden, two circular stairways and adjoining living rooms, with an entrance from the street in three aisles. At a right angle adjoins the great antique gallery, enclosing a part of the garden. The building shows two high stories next the street, each with a mezzanine, and high additions with two pavilions. The garden facade is ornamented by reliefs in the richest manner, which in combination with the picturesque elevation makes this Villa indeed the most charming example of this species of building in the Italian Renaissance. (Fig. 193).

Villa Mondragone near Frascati comprises two small inner courts in addition to the great main court, has at the rear the so-called Theatre in the gardens, in front the extended terrace with the fountain with its bowl supported by dragons, and a wonderful view over the Roman Campagna. Beneath the terrace are arranged kitchens and service rooms. A representation of the dragon fountain is given by Fig. 194.

Villa Aldobrandini near Frascati was built for the Cardinal of the same name, being the last work of Giacomo della Porta, which Domenichino completed. It is the one most grandly beautiful among symmetrical designs with massive ramps, terraces, cascades and fountains, semicircular niches, with shaded and cool halls and subordinate rooms.

There should be further mentioned Villa Pamphili-Doria with its symmetrically arranged Casino with projecting middle portion, arranged with extended beds of flowers and fountains, and executed about 1644 by Cardinal Camillo Pamphili from the drawings of Alessandro Algardi. A very skilful use of the land is here very prominent. The Casino is carried to a height of three stories.

Villa Sacchetti now exists only in ruins, but it has an imposing niche motive on its facade and once belonged to the most splendid architectural creations. <sup>124</sup>

*Note 124. Percier & Fontaine give a restored plan of the building.*





Among the more important villas of the Late period belongs that (1746) of Cardinal Alessandro Albani with gardens designed by Antonio Nolli. On a long and narrow plan, there rises at the middle a great open hall with piers and a story over it and rooms behind it, adjoined by one-story porticos on the right and left with closed rear walls; at their ends are smaller rooms to receive art works, and near these are the charming little temple-porticos with the well known antique caryatids. On the left of the main axis is a billiard house, on this axis is a flower bed with fountains, down to which leads a great flight of steps, and the end of these is a coffee house with a semicircular open hall with columns (Hexedra). Magnificent groups of trees with shady walks complete this artistic work.

In the repeatedly mentioned work by Percier & Fontaine <sup>125</sup> are further represented:- Villa Barberini (built about 1628 by Luigi Arrigucci and Domenico Castelli; Villa Negroni, built in 1570 by Domenico Fontana, with symmetrical gardens composed about a central axis and with a great triangular front garden: Villa Altieri, Villa Bolognetti, Villa Taverni, Villa Muti, Villa Colonna, and Villa Farnesiano. The so-called Farnese Gardens were still (1866-7) in the best condition, with their pavilion-like bird-houses, subterranean grottos, ramps, and sgraffito ornamentation of the walls. The gardens were purchased by Napoleon III (1861), and then by the Italian government in 1870 for the purpose of excavations on the Palatine.

### 139. Palace del Te in Mantua.

The most important Villa building remaining to us from the golden age of the Renaissance is the great princely Summer-House of the Gonzagas, the Palace del Te (Tajetto) in Mantua, built in 1525-35 by Giulio Romano, adorned by mural paintings and grotesques, and supplied by Francesco Primaticcio with reliefs and artistic ornaments in the interior, such as are scarcely to be found more beautiful and of more perfected form elsewhere. The building forms in plan an enclosed square over 656 ft. on a side; the rooms are of unequal depth and enclose a second court (Fig. 195). The external facades are rather too severely subdivided by Tuscan pilasters; the garden facade



opens at the centre with a wide hall with 3 arches resting on 4 groups of coupled columns, recalling the loggias of the good period. Executed in Stucco work, it lacks the detail of a finer treatment.

#### 217 140. Villas at Genoa.

The villas built in and around Genoa (1512-72) by Galeazzo Alessi belong with the best offered on the Ligurian coast. The arrangement of the villa and garden on the slope of a hill also here requires some peculiarities, two systems being employed beside each other. Either the Casino, i.e., the Villa proper, lies close to the street and the plan then extends upwards on the slope, or the Casino lies at the higher end of the plan and is reached by ascending the latter.

There may be mentioned as prominent examples:--

a. Villa Paradiso in S. Francesco d'Albano, built about 1600 by Vanone, which exhibits a long inclined ramp extending from the entrance portal on the street to the Casino in two stories with the usual mezzanine and with vestibules on two sides on the middle axis. The plan is rectangular and the facade is divided into a central portion with two wings; in the upper story and on one side is arranged a loggia extending the entire depth of the building, on the other side being another of but half the depth. The exterior shows rich forms of details and ends with an entablature with modillions and an attic above it.

b. Villa Scassi was built by Alessi in 1560 and shows the reversed arrangement. The Casino is of similar plan but lies next the street, while as in Roman villas, ramps, fountains, basins, terraces with grottos lie on the longitudinal axis and rise towards the hill. The triple subdivision of the facade with a very slight projection also occurs here.

c. Villa Sauli shows an interesting plan with a court before the Casino enclosed on three sides by porticos, the Casino opening with a loggia of three arches in the entrance facade.

d. The earliest work of Alessi is found in Villa Cambiaso in Albano, built in 1548. It has an approximately square plan with a facade subdivided in three parts, with a triple-arched vestibule opening between the angle projections. The ground





story is subdivided by three-quarter columns of the Doric order, the upper story by Corinthian pilasters. High stories with mezzanines, entablatures with modillions, and an attic, are the usual accessories, beyond which Genoese villas did not go.

From the modern point of view, their exteriors are less picturesque than the Tuscan and the Roman. Ramps here lead up to the elevated Casino.

e. Villa Pallavicini delle Peschiere was also by Alessi in the time from 1560-72. The Casino with its projecting side wings is elevated high; ramps and grottos lead down to a sunken garden.

f. Villa Franzone in S. Francesco d'Albanò, built by Borsotto in the 17<sup>th</sup> century, also has the elevated Casino next the seashore and the sunken garden constructed on the land side.

*Note 127. A large number of Genoese villas is published in Reinhardt, R. Palast Architektur in Oberitalien und Toscana vom 15 bis 17 Jahrh. Genoa. Berlin. 1886; also Gauthier, P. Les plus beaux Edifices de la Ville de Genes et de ses Environs. Paris. 1830.*

#### 141. Villas of Palladio.

Palladio's villas (1518-1590) are mostly to be considered as great and regular country-seats standing in the midst of farm buildings, and he was well acquainted with the original form of the villa, for he did not open the facade as a loggia, but rather always placed before it a portico or even an entire temple-portico with columns, entablature, and pediment. His most famous Villa, called La Rotunda, is that one built for Marchese Capra, which has a great circular hall in the centre, surrounded by external apartments, so that the plan produces a square, whose four sides have hexastyle temple facades, to which lead massive flights of steps (Figs. 196-199). The building has one story and a mezzanine; the form of the circular hall appears externally (Fig. 198); the hall itself is lighted by a skylight at its apex.

Further to be mentioned are the Villas Pisani at Bagnolo and at Montagnana, Villa Violante Porto, Villa Valmarana with hexastyle porticos in both stories, the upper one covered by a



great pediment, Villa Thiene, Villa Pojana, Villa Schio, and many others.<sup>128</sup>

*Note 128. Published in Scamozzi, O. B. Les Batiments et les Dessins de Andrea Palladio. Vol. 2. 2 d edition. Vicenza. 1786.-- Other Villas are to be found in Vol. 3 of the same edition.*

In the third section of the work mentioned below<sup>129</sup> are given 129 villas, partly executed, partly begun and then never completed, or merely building plans for villas, that never came to execution. To these belong among others, Villa Foscari on the banks of the Brenta, Villa Antonini in Friuli, Villa Trisino,<sup>130</sup> Villa Sarego, and Villa Vassor near Treviso. Another work<sup>130</sup> mentioned below also gives the last named, built for Daniele Barbaro near Treviso, which is entirely built of brick, including all ornaments, capitals, festoons, statues, etc. It has been again described recently by Reinhart in the journal<sup>131</sup> mentioned below with an illustration. The opinions on this Villa in the three publications are so entirely different, that one cannot tell what the art-loving public can make of such statements. Of these, Auer says in his Essay on Palladio in the same journal,<sup>132</sup> that the exterior has been spoiled by the hands of dilettantes, while in the same journal<sup>133</sup> on the occasion of a description of the frescos of Paolo Veronese in this Villa, Janitschek says; "The effect of the beautiful central building is greatly injured by the side wings, whose angle projections are disfigured by ugly curved volutes." Scamozzi cannot be made responsible for this, since the view of this Villa in the edition of the "Architettura" supervised by Palladio himself differs in no wise from the form that it has today. Then Janitschek refers to Book II, Chap. 14 (p.51), of the edition mentioned, which Jean Rossi also uses in his text on Villa Maser!

*Note 129. Francheschi, D. de. I quattro Libri dell' Architettura di Andrea Palladio. p. 5. Venice. 1570.*

*Note 130. Louisa a Rialto. L'Architettura d'Andrea Palladio divise in quattro Libri. Venetie. 1711. (Therefore somewhat earlier than the previously mentioned work). -- Vol. 2. Dei Disegni delle case di Villa di alcuni Nobili Venetiani. Chap. 14. p. 113.*





Note 131. *Zeits. f. Bild. Kunst.* 1866. p. 61-64.

Note 132. *Do.* Vol. 17(1882). p. 65 et seq.

Note 133. *Do.* 1877. p. 364.

So much is then certain from the view from nature in Fig. 199, that Reinhart gives something in his illustration for the Villa Maser, which is like it, but is not that building, and that Janitschek is also incorrect, when he says that the execution agrees with what Palladio gives in the edition of his book in 1570, supervised by himself. The middle portion agrees generally in construction with the plans, except for the pediment statues and the beautiful figures in relief on the tympanum. The first does not exist; but instead of the cartouche of arms with bands as drawn, there is a double-headed eagle with nude reclining and kneeling figures. The angle projections have in their massive piers rectangular niches with statues; the plan does not show these. The pediment-like additions have neither in the drawings nor in execution "ugly curved volutes", but harmoniously shaped quadrant curved connections: the middle part of the gable of the projection is square in execution, but rectangular in the drawings, and accordingly the figure is a circle and not an oval. On the former is a figure of Time and a band of figures, on the other is painted a circle of animals!

The great decorator Paolo Veronese permitted himself a few jests in his splendid painting of the interior, when he astonishes the visitor at his entrance by two figures, a page and a maiden, which seem to gaze inquisitively at him. Then at the rear of the series of apartments, in a view from one end to the other, there are painted two doorways, through which one believes he is looking out into the open air, a youth in hunting costume appearing to enter through one, and a young lady through the other.

A plan of the Villa is given in Fig. 200 in accordance with the source mentioned in Note 130.

#### 142. Villas of Serlio.

Serlio again gives in the 7<sup>th</sup> Book of his work <sup>134</sup> already mentioned 24 examples of Case fuori della Citta, which in addition to well known things propose many fanciful ideas. These are sometimes entirely enclosed designs with a round, oval, or



octagonal hall in the centre, around which are grouped the various living rooms. The form of the Greek cross is sometimes chosen, or the form of the Latin capital H or I; then again for angle buildings connected by walls enclose a square garden or court, at whose centre stands a pavilion; or a semicircular plan of the court with projecting wings is selected, adjoined by the living rooms at a right angle; then comes an octagonal court around which lie enclosed halls and rooms, with buildings projecting at the oblique sides of the plan. The oddest assumes a cross-shaped plan with small projecting transverse buildings at the ends of the arms of the cross.

*Note 134. Venetian edition of 1584.*

The loggia retains its old rights in many of these designs. The houses are either one-story or are placed on a high base, an additional half-story is given to them, or only certain portions are carried higher, for example, the wings or the central structure or both, while the intervening masses of the building remain only one story. Two-story designs are recommended, especially if enclosed courts are assumed; these are then surrounded by vaulted porticos in the lower story, which become terraces in the upper story. The master likewise pleased himself with a continuous balcony in the upper story of the court instead of the porticos and terraces. He once preferred to the native flat roof<sup>135</sup> the steep French roof (not a mansard). This is a Villa consisting of three wings surrounding a square court on three sides, which is enclosed in front by a wall with an entrance gateway. He then added great dormers to the roof. (See Italian text in original).<sup>136</sup>

*Note 135. In Chap. 24. Della Casa Vigesima Quarta fuori della Citta.*

*Note 136. Chap. 24. p. 80.*

He likewise endeavors to introduce the steep hip roof on the flanking wings.<sup>137</sup> (Alli angoli della quale vi sono le mostre di duo toricelli). Burckhardt<sup>138</sup> hereon remarks, that he wished to pay a compliment to his French patrons with this addition, when he introduced in his book Gothic dormer windows clothed in Renaissance forms. An effect like Chambord, where the most important and characteristic architectural forms are placed on





the roof, would then have only caused objections in Italy.

*Note 137. Book VIII, p. 135.*

*Note 138. Burckhardt, p. 190.*

Leon Battista Alberti only allowed obelisks, acroterias, and statues as ornaments on the roof.

Otherwise, Serlio follows in his villas tolerably closely the Roman or Genoese rule for a location on the slope of a hill, palace in front, garden behind, the fountains and water basins higher up.

*Note 139. Compare Book VII, p. 175, 165, 161.*

#### 143. Neapolitan Villas.

No important Neapolitan villa dates back of the 18th century. Older designs on the Vomero do not equal the Roman on account of the lack of water; "but they are so arranged, that the view would make one forget the finest surroundings".

The summer Palace already mentioned among Neapolitan palaces (see Art. 115), a Villa with extensive gardens, the Poggio Reale of King Alfonso should be further considered among villas, of which Serlio says; <sup>140</sup> "Questo palazzo per cosa moderna ha bellissima forma." The court is surrounded by vaulted arcades in two stories; its pavement lies several steps below that of the lower portico, thus having the appearance of a basin, down to which continuous steps lead (Fig. 201; plan from Serlio).

The King ate here and enjoyed himself "con quelle Madame e Baroni", which he invited. The climax of enjoyment was reached, when the King had some stopcocks in the steps opened, through which the water poured into the court; (See Italian text in original). "-----" cries Serlio after this description, not without longing. United Italy neither brought back these sports of the gods, nor did it produce harmony.

*Note 140. Book III, p. 121 et seq.*

He gives us a view of the exterior in two stories and a section through the court with its basin and the two porticos over each other.

Inspired by this building, which has unfortunately disappeared, Serlio gives an improved design, where in place of the court is a hall with an increased number of subordinate rooms and good stairways. He makes the exterior more animated, for



he supplied the 4 angle projections with towers like belvederes, subdivided the wall surfaces by pilasters, and after the Genoese manner inserted a mezzanine over each principal story. We cannot avoid here the reproduction of this plan, which is still usable. (£91. 202).

The rather simple statement of Serlio was extended by making known a ground plan, found in the library of Palace Barberini and published by von Geymüller in his great work on Tuscany.<sup>141</sup> But we should probably not recognize in this the actually constructed building, but rather an extensive ideal project of Giuliano. The basal idea is found in the columnar court in this, as in the small design, of rectangular and not of square form; the 4 angle pavilions are also retained; but the plan is otherwise extended and grandly conceived, so that it must be counted among the most interesting creations of the Early Renaissance. The entrance facade is dominated by a slightly projecting central part with five columns between the projecting angle pavilions, from which three parallel halls lead into the stepped court, as in Palace Farnese in Rome. Since the entrance should follow on a longer side, the opposite one receives on account of the perspective effect a rectangular projection, at the centre of which is arranged a fountain. Behind this lies a great state hall with a dome-like adjoining room and oblong rooms at the sides. Finely conceived and wonderfully arranged! No less than 14 stairways in this extensive design provide access to the upper story, in which are arranged a multitude of conveniently accessible subordinate rooms with and without ante-rooms. The long side facades are again interrupted by projecting central parts, which animate the receding parts by porticos, so that a general incomparable effect is produced, which in combination with the interior would have raised it to an art-work of the very highest rank.

*Note 141. Plate 3. Giuliano da Sangallo. Disegno fatto per il Re di Napoli nell' anno 1488.*

144. Villas in Upper Italy.

In Upper Italy, the plan of Giardino Giusti at Verona deserves mention, even on account of its wonderful cypresses. The Palace is placed next the street; the plan ascends the slope of





the hill to the high terrace overlooking the valley of the ---. Ad 12,  
 In the western bay of Lago Maggiore lie the little islands composed of low rocks of mica-schist, on which Vitalino Borromeo (d. 1690) created a princely seat by the building of a palace and the arrangement of gardens, with magical effect of imagination. On Isola Bella the design rises to a height of 105 ft. in 10 terraces, ornamented by statues and interscoted by shaded and grotto passages, charming with its far southern vegetation.

On Isola Madre, 7 terraces bear similar ornamentation with precious views of the villages on the lakes.

### Chapter 13. Houses.

"A very poor man is happy, if he merely finds a roof. He is always satisfied with a little hut of 10 × 12 braccias without any internal divisions."

Filarete's Traktat über die Baukunst. Book XII.

#### 145. House of the Artisan.

What Filarete here says was already true long before him and will be further true as long as poor devils are on this earth. But in his ideal city of "Sforzinda", he would provide a home for the artisan, the merchant, and the artist, and he prescribes special architectural programmes for such people, which may follow here.

a. For the home of an artisan, a floor area of 30 × 50 braccias suffices, the end being turned toward the street. A passage leads thence through the middle of the ground story, on one side of which is a work-shop with a store-room behind it, on the other being a dining room and bed room. Next the little court behind the house are to be the wood-house and fowl-house at one end, the kitchen and vaulted cellar beneath it being at the other. If the building be two-story, then a sitting room and a chamber are to be arranged in front with two other rooms next the court. "Since for this arrangement 24 braccias in depth 225 are required, this story must project about 4 braccias over the lower one; this occurs next the street, so that the workshop has a projecting roof above it." Along the side next the court extends a gallery, on which the washing may be dried. The garden should have a depth of 10 braccias.

Since Filarete is silent concerning the stairway, it may well



be assumed, that he laid no great stress on its treatment, which may appear justifiable on account of the limited dimensions.

b. <sup>146: from the Medici.</sup> The house of the merchant is indeed conceived by Filarete to be somewhat more important, for he first assigns to it a larger site of 50 x 150 braccias. He requires for it a fore-court, closed by a portico on the side next the street, and enclosed on two sides by projecting wings, on the third by the dwelling. Before each is placed a portico for the unloading of goods, behind this being found offices, sales-rooms, as well as store-rooms.

He also places a portico before the house, through which a central passage leads to a second court; the latter is only separated from the garden by a portico. The side wings contain in this second court servants' rooms, kitchen, bakery, and the like, while there is only a cellar under the main building, in the ground story being arranged a great hall and two great rooms.

In the second story is then found a drawing room with a room at each end, and the like arrangement occurs in the upper story. The second story of each wing contains two chambers. The flat roof of the portico on the street serves as a balcony and fragrant plants are placed there. "It is necessary to provide conveniences of all kinds," whereby the stairs are also meant, though Filarete says nothing about them here. The principal doors and windows have the proportions of 1 to 2; those of 1 to 1 1/2 being assumed for the others.

The care taken of the fore-court, the unloading of goods, the balcony with its flowers, the situation of the home somewhat removed from the street traffic, the change in the height of the different parts of the building, -- are indeed charming things; but whether a merchant of middle rank ever built so, can hardly be assumed.

That the great merchants and manufacturers were not pleased therewith, we know (compare the Medici, Rucellai, and others), and that the small dealers lived in rented houses near the great merchants, exactly as in classic antiquity and also to-day, we likewise know.

Wherever possible, the antique house was taken as the bases of the house as well as of the palace, and the same economy





with limited sides, for example in Pompeii, which grand idea was firmly retained, likewise appears in the time of the Renaissance.

A little court with or without a vaulted passage around it and a good stairway are found everywhere, when the rooms next the street were rented for salesrooms or used for stables, carriage-rooms, etc., as shown by the plans of houses in the Via Cinque Lune on Place Madama, as well as the Palace del Bufalo. (Fig. 203-205).

Brunellesco renounced the use of the court in the five-story house in Via del Governo Vecchio at Rome (Fig. 206), where the ground area must be utilized to the utmost, which gave occasion for an unusually high building in stories in proportion to the dimensions of the plan.

#### 147. House with Store.

The merchant's house, or better said, the house with a store, found its definite architectural expression in certain Roman palaces and houses, where usually a mezzanine story was added to the store, and which served as a storehouse or for the rented dwelling of the dealer, while the best story, i.e., the residence of the nobleman only commenced above this.

A noble example of this kind was given by B. Peruzzi in his Palace Costa in Rome (Fig. 207), where the doorways to the store show the moderate widths of 7.6 ft. with low heights; these are always spanned by horizontal arches by preference, -- entirely after the antique method.

A similar solution appears on a house in Via del Governo Vecchio in Rome, but where the doorways to the shops are made wider (Fig. 208; 8.38 ft.).

The endeavor to make the shop as wide as possible in the period of increased prosperity and of the enlarged activity of the dealers, as well as the increased endeavor to attract the purchasing public, already existed then as at present, and it then as now found its peculiar expression on the facade. Store openings of nearly 13.1 ft. clear width, spanned by loaded horizontal ashlar arches also look well in our time, when the residence stories over stores are set on "stilts", and the widest openings in the facade are placed in the ground story;



but they are still admissible and never violate the sense of stability, since they are always separated by massive rusticated piers and the character of the strength and solidity is innate in the spanning of the opening.

What may be dared with well executed and properly calculated horizontal arches up to 12 ft. span is shown by Fig. 209, where the middle is loaded by a window pier extending through all the stories above, and also Fig. 210, Palace Niccolini. With the but slightly less clear width of 11.5 ft. of the shop, Giulio Romano held it to be better on his Palace Ciciaporti in Rome (Fig. 211), in accordance with antique models (Theatres in Ferento, Taormina, Rome), to relieve the horizontal arch by a semicircular one, and to insert the mezzanine window within the latter as an effective architectural motive.

#### 148. Houses for Occupation and for Renting.

Besides the business places for artisans and merchants, there were also built dwellings or rented houses for officials, artists, learned men, small capitalists, etc., either as needed buildings of ordinary character, or as artistic buildings with the assistance of architects, that the best of the profession did not reject and sought to confer on them an artistic appearance.

The House of the Notary Sander in Rome, built (by Bramante) with three windows like most of this kind, gives proof of this and is evidence that even a dwelling may become a monumental work of art, if one proceeds with earnestness, spirit, and taste. The good proportions of the windows with their beautifully proficed architraves and the fine sgraffito friezes beneath the window-sill courses, the skilfully adjusted alternations of openings and of masses, here create a model, modest, yet still artistically imposing facade of a dwelling.

Charming examples of such houses with three windows are afforded by the facades produced at somewhat greater outlay, of the so-called Palace Serristori in Florence, built by Baccio d'Agnolo, and that of Casino di Livia there by Buontalenti, (Figs. 212, 213), where the too rich ornamentation of the Early Renaissance is avoided. The buildings will be no more refined than their occupants!





I reckon that the so-called House of Palladio in Vicenza is among these happy creations. At this place must be mentioned likewise the little House noted by Burckhardt<sup>142</sup>, built about 1481 not far from the Palace Basilica in a still half Gothic style, recognizable by the motto; "Il n'est rose sans epine."; then that number 1944 with the motto; "Omnia praetereunt, redeunt, nihil intersit."; and number 1276 "as a remarkable attempt to be monumentally imposing in the very smallest dimensions."

*Note 142. In Der Gicerone, etc. p. 224. 1st edition. Basle. 1860.*

Referring to Burckhardt's *Gicerone* (edit. 1860), these are to be added; in Padua (p. 223), the so-called Casa di Tito Livio (Palace Cicogna), a small building; in Ferrara (p. 213), the simple House of Ariosto (Strada Mirasole no. 1208, Fig. 220); in Bologna (p. 203), the capriciously beautiful little corner<sup>230</sup> House no. 496 Via delle Grade, and various ones on Place S. Stefano; in Bergamo, the Casa Maffeis with its elegant little court (Fig. 214), surrounded in the ground story by a colonnade with architrave, in the upper story by an arcade portico, and likewise in Bergamo is Casa Fogaccio to be mentioned, a three story building, the stories subdivided by pilasters, and the upper story distinguished by a loggia.<sup>143</sup> This House is located at No. 11 Via Gaetano Donizetti, built of dark marble with inlaid disks of red Veronese marble, recalls in details Palace Communale in Brescia, and it is of extraordinary beauty with the most refined profiling of the belt-courses. Taken under restoration some time since, it must after completion be classed as one of the finest private buildings of Upper Italy. The chosen palace motive for this House with three windows is not disadvantageous in the narrow street. This building has an entirely monumental effect within narrow limits. Pietro Isabello, surnamed Albano, is designated as architect.

*Note 143. These houses at Bergamo, as well as the following houses in Brescia and Milan, are published in Paravicini, T. V. Die Renaissance Architektur der Lombardei. German translation by P. Koppel. Dresden.*

Bergamo conceals in its older portion an abundance of stimulating examples of the smaller houses of all kinds and of all



phases of Italian Renaissance art. Charming ones are presented by the transition style with trefoil windows in the upper story, below these extending painted friezes with foliage, medallions and cupids. Some houses on Via dell' Arena in the vicinity of the Cathedral exhibit interesting things with completely painted facades. The ground story with ashlar painted gray on gray, in the upper stories being simple rectangular windows above continuous window-sill belts, the window enclosures being made especially prominent by paintings, the wall piers being animated by painted figures in niches between painted columns, these figures being yellow as well as the capitals, the shafts of the columns being treated as if composed of variegated marble, besides them being painted loggias with rich perspective views; we further find half-timber houses above a stone ground story, the external walls of the upper story resting on projecting beams with plates, the front surface now plastered white, formerly showing the wooden framework, the example of a half-timber house built at the foot of the Alps under Swiss influence, without any art forms. (Fig. 127). Then the interiors of such houses with charming little courts, surrounded by arcade or colonnade porticos in the lower or upper stories, often picturesquely overrun by green vines adorned by gay flowers! These are dwellings in modest style but charmingly beautiful. (Figs. 215; Court of Houses nos. 72 and 74 Via Pignolo in Bergamo).!

But this external colored ornamentation could not be forgotten in the houses in Vicenza. We first learned from this point of view to properly appreciate and understand master Palladio in his simpler creations. His little House with two windows has rather too classic an effect in the drawing; but conceive the colored decoration added to it, which may well be realized from the vestiges on the building; the shrine between the Corinthian pilasters of the upper story contained a large figure painted in fresco in bright colors, likewise the rectangular panel in the attic story above, the small windows beside this, surrounded by cartouche-work and grotesque ornaments, the parapet frieze beneath being also decorated by paintings, as well as the simple, large rectangular windows enclosed by grotesque





paintings. The surfaces of other façades once bore the like complete ornamentation according to still existing vestiges, which now appear to dry or plain, palaces by the same master in the city, that are properly understood only with this decoration, and should thus be judged.

In Brescia should be mentioned the three story Casa Bolognini with beautiful portal, rectangular windows, peculiar lace-work and spherical ornaments on the surface of the facade of the third story, a House on Via Torino in Milan with a pretty court with columns, and with the broad window architraves characteristic of mediaeval buildings in Lombardy; Casa Salimbini in Via Torino there with an interesting three story court with columns, and finally, also the court of Casa Taverna, beautifully painted by Luini, a colored <sup>144</sup> drawing of which is reproduced in the work mentioned below.

*Note 144. Gruner. B. Specimens of Ornamental Art. London. 1850.*

#### 149. Simple Houses for Renting.

But of the simplest houses in blocks, as they stand close together in the streets of Tuscan cities, Fig. 217 gives a representation from a drawing in the Uffizi. Solid ground story with doorway and mezzanine windows, simple window-sill courses, on which stand the semicircular windows, divide the height of the house; a projecting cornice with rafters terminates the building at top. On one of these houses, the owner has made himself known by his family coat of arms.

150. <sup>148</sup> Filarete's House of Virtue and Vice, and House of Onitoean Nolliver.

*Note 145. Formed by transposition of the letters in the name of Antonio Averlino. See XVII, Buch der Traktat.*

When Filarete begins the description of his Houses; "the House should properly have the complete form of a hill; but since it must be habitable, then is it built in stories,"--this suffices, and when he provides in the House of Vice for brothels, beer-saloons, cook-shops, gambling-hells, and rooms for women, and also rooms for police soldiers in addition thereto, with the argument that vice requires a curb, and too great scandal must be atoned for by prison and other punishment, -- this is a good measure,



and when he raises over that of Virtue a dome supported by the nine muses, on which the figure of Virtue crowns the whole, -- a form in armor with a sun-like countenance standing on the apex of a diamond, with a laurel-tree and a date-palm in its hands, a fountain of honey at its feet, from which bees are sipping, -- as difficult of access as Parnassus and furnished with a spouting spring like Helicon, which scarcely leaves anything further in grandeur of thought to be desired!?

But in the enclosure of the Houses of Virtue and Vice has his own house found a place, the wonderfully decorated House of "the builder of all great works of the city." But he was modest in the size of his artist's home, for he built on but 1/3 of its site, leaving the remainder as a garden. He placed a portico of four arches before the house; a middle passage left rooms on the right and left; the passage itself led to a columnar court with a portico, behind which lay a building in two stories with a garret. The lower story contained two rooms, separated by a passage to the garden; in the upper story was found a salon and a chamber. In the front building were two chambers above, over these being a larger hall occupying the entire space. The garden contained a fish-pond and was surrounded by offices, stables, etc.

And then the little variety! "Over the door and in the court, 234 it has been permitted to Onitoean to add his portrait with an inscription in honor of his works; also the allegory of Virtue and Vice devised by him, of caprice and reason, of fame, of remembrance, and of intellectual talents."

In antiquity, in gratitude for the success of his statue of the deity, Phidias was accused of theft of the gold; an imperial dilettante had Apollodorus' head cut off; in the middle ages, the devil took care of the artist, who had finished a great work; Sansovino was imprisoned in the Renaissance, punished by a fine, deprived of his honorary office, because a part of his wall fell down; Peruzzi died in poverty; Borromini took his own life; in spite of his numerous buildings, Palladio never prospered: Titian became a rich man by his traffic in wood, but not by his art, -- and Filarete deluded himself by the thought of higher honor for what he had done against his judgment, and which was never





assigned to any artist!

Raphael, Bramante, and Giulio Romano had their own houses in Rome and Mantua; Palladio built for himself a modest home in Vicenza (if this be true); Salvator Rosa occupied a charming little house in Rome (Fig. 218), and that which contained Michelangelo at the foot of the Capitol was not large, according to the plan, and Ariosto inscribed on his house (Fig. 220):--

"Parva, sed apta mihi, sed nullia obnoxia, sed non sordida, parta meo sed tamen aere domus."

None have ever been too comfortable.

#### 151. Location of the Living Rooms.

Leon Battista Alberti also speaks in his fifth Book <sup>146</sup> of the place of the living room in the house, in which he is so rational, that he establishes no generally valid rule for their arrangement towards a particular point of the compass, but makes this dependent upon the nature of the ground and of the air at the site of the building.

*Note 146. Chap. 17, p. 124. De la Villa de Padroni e de le Persone nobili e di tutto le parto sue, e del luogo loro comodo.*

After a lengthy discussion of chimney flues, he requires the kitchen to be so placed, that it should not immediately offend the guests; but it ought not to be so located, that in bringing in the food, this would come to the table too cold or too warm, and also that the kitchen maids handling frying pans and bowls may not be heard while eating. The room of the mistress of the house is to be so placed in the plan, that everything may be overlooked from it, that is done in the house. Husband and wife should each have separate rooms, in order not to weary each other in case of illness, etc. Each of these rooms should have a separate entrance and also a door connecting the one with the other, so that mistress and master may communicate privately. Next the room of the wife is required a room for articles of clothing and one for books adjoining that of the husband. If there be an aged father of the family in the house, a warm room with a stove (*caminetto*) must be provided for him, and beside it a room for articles of value. The boys can be placed in the latter and the girls in the room for clothing, beside this being a bed room for the children's maid or nurse.



Rooms for guests are to be arranged near the corridor, in this vicinity being a room for resting and to receive articles of value. Their location near the entrance enables the guests to receive calls without causing disturbance in the house. Opposite the rooms for strangers are to be placed the rooms for the youths of 16 to 17 years, or at least not far from them, so that they may cultivate friendship and stay with the strangers. The rooms for the maids and servants must not be placed too far from the state apartments, so that the former may always be at hand for service; but house-boys should sleep in the stables.

The same views are even still valid on this side of the Alps and beyond them.

#### Chapter 14. Details and Internal Finish.

Even if certain details of palace, villa, and house architecture were necessarily touched upon in Chapter 1 and in treating of the different kinds of buildings, a systematic grouping of these cannot be dispensed with, especially since in many cases the kind of material employed determines the mode of their artistic treatment; for example, whether stone, brick, terra cotta, wood, plaster or stucco, was selected for its execution, which can only here be considered in detail. The derivation of certain portions from works of an earlier period may likewise be more fully considered here.

##### a. Base.

##### 152. Form.

A special base in more or less developed form, size, and projection indeed belonged in all periods to every artistic structure, whether it be an arrangement of steps, as on Grecian temples, or a substructure divided into three parts, as shown by Roman temples (Fig. 133; Maison Carree in Nimes), or by a slight projection of a high course of slabs set on edge, as on the walls of the cella of the Doric temple, without any further addition of mouldings.

The last kind was preferably followed by the Renaissance, where narrow streets forbade a strong development of the base, or where the nature of the material made mouldings close to the pavement seem not permissible. Thus the brick buildings of Bologna frequently dispensed with any art form at the base: the





brick walls rise vertically to the first window-sill course (Casa dei Carracci), or a plain base was constructed of stone slabs, the brickwork thus being kept from contact with the sidewalk.

153. Base divided into two or three Parts.

On Palace Serristori in Florence, the ashlar with bosses begin directly from the sidewalk; Palaces Torregiani and Quaratesi in Florence, Vercapi in Rome and others, have plain and slightly projecting bases; Palaces Pandolfini and Pitti show a division into two parts, i.e., a plain or moulded covering belt above the masonry rising from the ground; Palaces Strozzi and Guadagni in Florence and Bevilacqua in Bologna have the well known bench base; Palaces Rucellai in Florence and Piccolomini in Siena have a base connected therewith, which is limited by a special belt course.

The antique Roman division of the base into three parts was first adopted by Bramante in the most beautiful way on Palace Cancellaria and on Palace Giraud in Rome, which have remained models for the later period. Plinth, dado, and cap, together form the base of the building, first emphasizing at a small scale, what is expressed at large on the entire building by its triple division into base, vertical wall, and the roof cornice.

(Compare Fig. 146).

b. Belt Course.

154. Shape.

Window-sill belts and belt courses between stories divide horizontally the vertical masonry in height, the former of these being usually made less bold and less strongly projecting. Florentine palaces and houses of the Early Renaissance all exhibit according to mediaeval custom continuous window-sill belts, profiled like antique cap courses, on which directly rest the window architraves. They mark on the facade the height of the window sills, which certainly does not correspond to the distance from the floor customary with us; for frequently the steps arranged in the window recess only raise the occupants enough to permit them to look down into the street.

When the height of the story from floor to floor is to be indicated on the exterior, and not that from window sill to window



sill, plain bands then occur at the height of the beams, frequently accompanied by a frieze and astragal. (Figs. 143 to 145 etc.). But both forms of belts also occur together on the building, if the horizontal is to be still more accented, when the story band becomes the base of the window parapet, which then consists of the base, the parapet slab, and the continuous window-sill course.

But the stories are also indicated by another mode of horizontal division, whether a vertical subdivision by pilasters of the different orders occurs or not; then the antique members, architrave, frieze and projecting cornice, extend across the facade as a window parapet. (For example, Palace Rucellai and Palace Lardarel in Florence). If brickwork is employed instead of ashlar, the projections are then reduced in accordance with the material; the energy of expression is lessened; the love of ornamentation recedes into the background; the customary antique members are even omitted. (Compare Palace Fava in Bologna).

### c. Main Entablature.

#### 155. Wooden Entablature.

The upper termination of the building is formed by the roof or eave cornice, whose form, size, and projection in esthetic respects primarily depends upon the entire building, but which is chiefly determined by the material. The oldest form is indeed the wooden cornice, which is composed of the uppermost beams and the rafters of the roof. It best fulfils its purpose by affording to the lower parts of the building protection and shelter against sun and rain. The great projection, frequently extending more than 6.56 ft. from the face of the wall, is practically not produced by oblique struts, as in mediaeval wooden architecture on this side of the Alps, but by projecting timbers laid on each other (compare Fig. 59) or by consoles.

#### 156. Entablature of Cut Stone.

The projection of the eave cornice is limited with the use of sandstone or limestone. In order to not be compelled to build walls of unnecessary thickness, the Renaissance has frequently adopted very artificial expedients, in order to obtain the greatest possible projection, as first made apparent on the entab-





239 entablature of Palace Strozzi. (Compare Fig. 128). In relation to form, it generally took up the antique cornice with consoles, then paying attention to the ancient ratio of 1 to 1 of height to projection, sometimes employing the consoles in simpler forms in the frieze, sometimes in richer forms beneath the cornice with coffers. The corona is then accompanied by frieze and astragal beneath, or by frieze and architrave, according to the subdivision of the surface of the facade.

#### 157. Entablature of Brickwork.

If bricks were employed, then the eave cornice applies what was said in Art. 154 concerning belt-courses of brickwork. The projections are reduced; the decoration by ornaments in relief and color then afford a substitute for the lack of energy.

#### 158. Cavetto Entablature.

Egyptian styles are almost recalled by the great cavetto cornices constructed of wood, reeds, and plaster, and whose monumental models must indeed be sought on the facades of the Early Christian basilicas of Rome. In combination with lunettes and colored ornamentation, they furnish a charming decoration crowning the building, as may be seen on many Lombard monuments, most beautifully on the House on the bridge-head of the Certosa near Pavia. (Fig. 221).

#### d. Projection of Upper Stories.

##### 159. Upper Stories corbelled out.

The mediæval corbelled story, where no words were wasted on the construction, does not absolutely imply half-timber work, to which no attention at all was devoted in the cities of Italy. Already in the middle ages (see Pisa, Florence, Siena, etc.) more monumental methods of construction were employed in order to obtain a relatively wide street for traffic without loss of space for the dwelling, the compulsory reason that produced projecting and high buildings in stories in the cities with increasing population and closely restricted walls.

Then the corbelled-out facade walls rested on stone corbels connected by arches, and either bricks or ashlar were employed, according to which material was most advantageously provided at the locality. Thus, for example, at Bologna on Casa dei Carracci ordinary bricks were employed without any artistic



forms, consoles were built out, finished with stone caps and connected by semicircular tunnel vaults, which have richly moulded and ornamented archivolts on their fronts; above these commences the plain masonry of coursed brickwork. (Fig. 222).

At the same place and in the court of Palace Fava, the tunnel vaults are set on massive, richly ornamented consoles, which support a continuous balcony, but which (according to Filarete) is not intended for the drying of linen.

The mediaeval system was retained in Florence, except that for the tunnel vaults, the pointed arch was replaced by the round arch, or ashlar consoles were used instead. Very beautifully executed in its artistic development (volute scrolls and surface ornaments on the spandrels; compare Fig. 223 D) is the corbelling on the facade of the Inn "Ginevra e Porta Rossa" in Via Porta Rossa in Florence. On a House in Via dei Michelozzi near S. Spirito, the consoles for the upper story project 4.92 ft. beyond the face of the ground story; they are composed of 4 courses of ashlar 5.9 ft. apart from centre to centre, and are spanned by semicircular tunnel vaults (Fig. 223 A). Where for greater projection, the consoles are built of relatively smaller stones, the ashlar are frequently displaced; such consoles were later connected with the bold masonry of the lower story by visible iron bands. On some simple houses of the early period in Via del Mercantino, we likewise find the consoles connected by depressed or pointed arches.

A House in Via Toscanella exhibits a wooden construction entirely translated into stone, the horizontal beams being formed like architraves and supported by stone struts 6.56 ft. long, resting on corbels, these supports being set 7.2 ft. apart, and only the end tunnel vaults having tie rods (Fig. 223 B). I give only their characteristic examples, although many others of similar nature might be pointed out in the city.

The old, large, painted House on Place S. Croce (Palace Antella), whose original plan may be found permanently exhibited among the drawings in the Uffizi, exhibits stone-beam construction without arches between, i.e., one with horizontal beams beneath, where the consoles are 8.55 ft. from centre to centre and stone struts over 6.56 ft. long with sections  $1.18 \times 0.85$  ft.





are employed. 148

*Note 148. Similar constructions with straight stone beams and stone struts on the buildings on Bridge Ponte Vecchio at Florence and elsewhere.*

Perhaps Filarete conceived the corbelling on his artisan's house as executed in this manner.

Another mode of supporting projecting stories, which produces an effective architectural motive, is found in a row of houses on Place delle Erbe in Verona, where instead of struts vertical detached supports in the form of columns are arranged. (Fig. 223, E, F; examples from Bergamo).

#### e. Windows.

##### 160. Form.

Whatever antique art created in the forms of windows, we find again in the Renaissance with certain modifications; also whatever new was contributed hereto by the middle ages was adopted, but translated into the forms of the Renaissance. The basal form is still frequently Romanesque and Gothic, but the detail is like the antique. The straight lintel, the semicircular, as well as the pointed or segmental heads were retained; a new form was scarcely added thereto; trefoil, foiled, ogee, curtain, or recurved arches as internal forms of window openings are mostly foreign to the style. Yet there is also here no rule without exception; a kind of curtain arch is found on Palace Montanari in Vicenza, others on the portals of S. Agostino in Montepulciano, on the Confraternita in Arezzo, etc.

The coupling of separate windows, covering them by a great arch and combining them into one whole was without doubt transferred from the preceding art period, as well as the stone mullion and transom within the rectangular window. (Rome and Florence; Palace Venezia and Palace Gondi). The window enclosure has generally the form of an upright rectangle, although variations therefrom occur. The ratio of width to height in the clear varies between the limits of  $1/2$  to 1, 1 to 1, 1 to  $1\frac{1}{2}$ , 2 to 3, and over.

##### 161. The Enclosure.

The enclosure of the window openings occurs in the simplest way by a uniformly moulded band extending around them, subdivi-



subdivided after the manner of the antique architrave (ground story windows of Florentine palaces of the Early Renaissance), or the lower part of the band is cut off and replaced by a separate window-sill belt, on which the profile reappears. Also enclosures with the so-called ears on the lintel with inclined or exactly vertical jambs after antique models continue in use. The repetition of the ears on the jambs is also not excluded.

#### 162. Ornamentation.

The enclosure is enriched by a frieze and a horizontal cap above the lintel, where there may be above the latter ornamental decorations or pediment caps in angular or segmental form. This addition acquires more expression by the arrangement of the consoles on the right and left of the lintel, which support the pediment cap and which frequently have a band-like extension beside the jamb. The enclosures become richer, when to the jambs and lintel are also added pilasters, half, three-quarter, or entirely detached columns, which then support a complete antique entablature with or without pediment.

Returned or broken pediments belong to the Late Renaissance and the Barocco styles, the ogee pediments to the period of Bernini and Borromini. Returns limited to the entablature and leaving the pediment unbroken are likewise a form of the Late period, but they are ornamented by shells or cartouches with good effect. (Compare the windows of Palace Conservators in Rome). Instead of the pilaster, we also find hermes pillars diminished downward, which support lions' heads (compare Fig. 232; window of Palace Cucoli, Via de' Servi in Florence), above these being broken entablatures or small female heads with busts, as shown in a charming way by a window in Via Ginori in Florence.

#### 163. Round-headed and Coupled Windows.

The round-headed windows of the Early period vary in their enclosures from the antique; they either exhibit the wide ashlar enclosures with external painted form and the recurved point at the crown, or strong moulded and decorated bands form the enclosure. (Figs. 224, 225). Coupled windows of this kind either have similar bold ashlar enclosures, furnished with small piers and architraves, from which then rise small round arches with the perforated tympanum slab, or instead of the dividing pier,





there occur slender columns and narrow pilasters at the jambs, which receive the architrave and arch, whereby the enclosing band stops the ashlar-work. (Figs. 226, 227). A beautiful and rich treatment is shown by a double window recess in the court of S. Pietro in Perugia (Fig. 228), on which the finest antique forms of details attain to their full rights. The archivolt members of the double window and of the covering arch are carried down completely to the window sill as an enclosure.

The arrangement of the great arched windows in Florentine palaces (Strozzi, Riccardi, Fucellai) has already been illustrated and described in the text, so that there only remains to notice the details, which are shown at larger scale in Figs. 224 to 228, and in what way the arch mouldings intersect and how the spandrels are filled, whenever they are not perforated.

#### 164. Execution in Brickwork.

These window motives were already executed in brickwork on the brick buildings of the Early Renaissance in Lombardy and farther south to Bologna. Not easily will more charming and luxuriant details be found elsewhere than here, where the treatment of the basal form of the window also experienced a change, when the middle support gives place to a free terminal in the form of a console. A characteristic peculiarity remains there in the acroterias at impostes and crown, frequently taken at too large a scale, but always finely detailed. Casa Vecchietti, Casa Carracci, Palazzo Pallavicini (now Felicini), Fava, and Bevilacqua, in Bologna, present charming examples of this sportively ornamented brick architecture. But still more richly have Filarete and his coworkers or successors treated their painted double windows on Hospital Maggiore in Milan, with the use of marble and terra cotta. The brick architecture of Upper Italy, as well as that of Bologna, celebrates real triumphs, so far as concerns composition, details, and execution. The splendid broad enclosures with cupids climbing in the vine accompanying the refined beaded astragals and egg-and-dart mouldings, together with the monumental filling of the spandrels of the arches with vividly modelled busts, the properly slender marble shafts of the columns supporting the double arches, give a precious architectural treatment to the enclosures within the colonnades



and the blind arcades of the facades.

165. Enclosure of Coupled Windows by Pilasters and Entablature.

But a still more magnificent effect is produced, if these coupled windows are likewise enclosed in rectangular form by an entablature supported by pilasters or columns, to which may further be added wide pediment caps. (compare School S. Rocco in Venice).

166. Window by Sansovino.

Decidedly more charmingly are developed the treatment of windows, when the masters returned to Late Roman models and transformed these into splendid designs of the very highest rank by their refined taste and sense of beauty, by retaining the triple window, whose middle part was round-arched and the side parts ended horizontally with architraves (Fig. 229), a motive that may still be found on the imperial Palace in Spalato, and which Sansovino indeed created with the most refined details on his Library in Venice, where he inserted a keystone in the arch and filled the adjacent spandrels with figures, after the precedent of the Roman triumphal arch.

167. Window by Palladio.

Palladio employed the motive more simply and more effectively, not as the window of a house or of a palace indeed, but on his Basilica in Vicenza, and which there far surpasses in grandeur of effect the style of Sansovino.

This motive has likewise been transformed in a peculiar way by Palladio on Villa Pojana, where a larger arch of ashlar extends concentrically around the inner and smaller one, and the slabs filling the space between the two arches are again perforated by plain round openings.

The same ideas, but translated into richer forms, are found in use in the windows of the hall in the upper story of Palace Vecchio in Florence (Fig. 230); excepting that radiating consoles are inserted instead of consoles, and the entire arrangement is also enclosed by Composite pilasters with the corresponding entablature, producing an ornamental form, such as cannot easily be found again, especially on this great scale. (Fig. 230).





The idea is more modestly expressed on a window of Palace Pucci in Florence with a more beautiful development of the details, the keystone containing a coat of arms, with a cardinal's hat, crozier, and inscribed bands in the spandrels of the arch.(Fig. 229).

#### 169. Other Windows.

A freer treatment occurs on the round-arched window with vertical and horizontal enclosure on Palace Pucci in Verona, late indeed, but in a not unskilful style. Below the imposts on each side are arranged hermes supports standing on consoles and pedestals, from which project the forms naked from the hips upwards, that indeed have a returned band above their heads, but they do not occupy themselves in supporting this, but rather play unseemly tricks (Fig. 231), for the male figure looks between his spread fingers at the enticing female figure, and where on another window disdainful male forms stand opposite each other, one of them turns his back towards the observer. Less skilfully are the keystones treated as colossal projecting heads without any architectural transition, like the Etruscan Gate in Volterra.

As an interesting diversity should be also mentioned the window on Via de' Servi in Florence (Fig. 232) and that inserted in the formerly open arched gateway of Palace Pitti (Fig. 233). (Compare Art. 162).

#### 170. Window by Bramante.

The great Bramante employed the round-arched window in a special way by enclosing it within a rectangular enclosure in a very simple form on in one most richly subdivided. The Gothic already sought similar forms in Lombard buildings, and before it, Romanesque art also; the Early Renaissance likewise had the need (Castello in Ferrara, Hospital Maggiore in Milan) of arranging a rectangular enclosure around arched windows.(round and pointed arches). But we must go further back in this case. There might sometimes be structural reasons, that permitted the masters to seek a form affording a better bonding of the voussoirs and the coursed ashlar together, than was the case with the direct intersection of the horizontal stones by the ashlar of the round, pointed, or segmental arches. Such stone-cutting is and remains bad, dangerous at all periods



when employed. It is obviated by the well known ancient Roman jointing of the voussoirs,<sup>149</sup> or more simply if the adjacent piece between the voussoir and the regular ashlar in course is cut in a single piece with the former, as Bramante did, and before him the Greeks and Romans had already done. We find in Athens the bonded arch in the vicinity of the well known Tower of the Winds in Athens, a work of the 1<sup>st</sup> century A. D., where the spandrels already bear rosettes to fill them,<sup>150</sup> and a further example on the Gate Porta de' Borsari in Verona, where the perfected "Bramante window" of the Cancellaria in Rome is completely imitated, though with the difference, that in Verona the detail is executed with shocking roughness. Whether in Bramante's time allied ideas in more beautiful form were preserved from a better period of antique art is hard to say, but it is more than probable (Fig. 224; Porta de' Borsari, and Fig. 225; window of the Cancellaria).

*Note 149. Compare Part II, Vol. 2, Art. 154, of this Handbook.*

*Note 150. Compare the same, Vol. 1, 2<sup>d</sup> edit., Fig. 220, with the reference to Bramante.*

#### 171. Closing of Windows.

That Roman antiquity did not stop with closing windows and doorways by fabrics, lattices of wood and metal, wooden shutters and the like, and that the wooden window shutters in hinged frames and with rather large plates of glass inserted therein were usual for this purpose in the imperial period, is well known, also that then metal fixtures for opening and fastening window, door, and shop shutters, such as hinge straps, locks with spring bolts, that further the wrought joiner's work, the mortises and tenons at the joints of wooden parts, the grooves, the inserted stops, (technical processes already employed by the Egyptians),<sup>151</sup> were executed, may indeed likewise be assumed as well known.

*Note 151. Compare the same work, Vol. 2, Art. 212.*

The storms of the migrations of the peoples scattered these acquisitions of the ancient world, a later period of quiet and development could again rediscover what the ancients had previously completed, and the beginnings were again as rude and like those in long past ages. First internal, then external





wooden shutters, which swung on hinge-straps and pins or on pivots and holes (sockets), like the doors of the ancient Etruscan tombs, fastened by an inside wooden bar, by hooks and rings, or by bolts pushed into holes, shutters in two folds, held together by joint-hinges or by separate bands with links, these are practically the means by which men protected themselves from heat and cold, rain and sunshine, for more than half a millenium; but for arched windows, the shutters, when placed externally, generally extended only to the springing of the arch; the upper portion between the spandrels of the arch remained open.

With this primitive and mediaeval closing of the windows, which always appears as solid wooden shutters with or without small openings for light, and which leave the room dark, if men wished to protect themselves against rain and cold, the Early period of the Renaissance was satisfied in Italy.

In adjacent Florence, bills for windows in the Castle at Caen (1388), in the Hospital Hotel Dieu in Paris (1376), and in Palace Hotel Charles VI (1380), make it certain, that here likewise, there was no other mode of closing in use, and such is also mentioned at the siege of Troyes.(1429).

Window openings for admitting light and to be protected against wind and weather had oiled linen cloth hung before them, or the linen was fitted into the wooden frames on in the openings. Thus in the year 1390, the Carthusians in Dijon closed the windows of their chapel with oiled linen cloths, and in the account of the expenses of King John in England (1359-60) are mentioned wood for the windows, nails, and oil of trupertine for making the linen cloth transparent. Charles VI paid in 1380 money for waxed linen (*toile ciree*) and nails for the windows in the room of Monsieur d' Anjou. Thin skins (*peau de cuir*), made transparent by fat, are also charged.

In the 14 th century, the citizens of Paris were acquainted with no means of closing windows other than by oiled linen cloth. According to the accounts of King Rene, there were the same conditions in the Chateau of Tarascon (1447), in the Palace at Aix (1448), in the House of Pertuis (1450), in the Chateau at Reculie (1471), i.e., the closing of the windows



with oiled linen cloth. For the room of Louis XI (1478-81), the accounts of the same King Rene (1479) show payments for oiled paper for closing the windows. This was an improvement in the introduction of light; it was less durable, but therefore more transparent. To strengthen paper and linen cloth against the wind, harp strings and bow strings were drawn through it. This was still practised in the 16 th, 17 th, and 18 th centuries. In the Palace Fontainebleau, even in 1639-42, windows of paper and of glass alternated with each other. The Princess of Montpensier announced even in 1649, that she had in the Chateau of S. Germain a great gilded and painted apartment, yet without glass in the windows! Waxed linen is even mentioned in Bordeaux in 1725 and oiled paper in the Hospital at Lyons in 1740.

## 172. Glazing of Windows.

Instead of Oiled paper, of oiled linen cloth, and of the skins of animals shaved thin and saturated with fat, glass also occurred in palaces and dwellings. While glazing is found but sparingly during the entire 15 th century and for 50 years later, it became tolerably common in the 16 th century (1550), but it should not be forgotten that the old processes still continued in use. Therefore it was still always costly. The demand for pure and bright daylight in the rooms caused the omission of the stone mullions and transoms to permit freer admission of light, the colored glass likewise disappearing, and at the end of the year 1650, the use of white glass alone in living rooms was established. The complete glazing proceeds but partially; the small disks were in time succeeded by the larger ones, i.e., the older roundels and quarries were supplanted by the rectangular pieces set in leads and <sup>152</sup>with or without facets. (Fig. 236).

In the work mentioned below, <sup>152</sup>is published the colored representation of a sleeping room of the 15 th century, whose original is to be found in the Museum of the Louvre in Paris under the title of "The Annunciation." It shows a rectangular window without mullion or transom, from which about 4/5 of the light from the window is shut out by two-fold solid and nailed wooden shutters; one of these is also divided in height, while the upper fifth of the window is glazed with quarries set in leads,





(Fig. 237 f), which furnishes a faithful and incontrovertible representation of the mode of filling a window of that time, in which complete glazing had not yet been introduced. This case may then be transferred to the arched window, concerning which we have already stated, that the shutters only extended to the impost, and that the upper part remained open to receive glazing later.

*Note 152. Havard, J. Dictionnaire de l'Ameublement et de la Decoration depuis le XIII Siecle jusqu' a nos jours, ouvrage couronnee par l'Academie des Beaux Arts. Paris. n.d. Vol. 1, pl. 41.*

In the Cathedral of Rheims is a tapestry of the 15 th century representing the Birth of Christ, in which is shown glazing with quarries. From the same time comes a picture by Pinturicchio (1454-1513) in the Library at Siena, on which roundels are painted, and in the picture "A lesson in Anatomy after the medical essays of Jean Ketnam" (Venice, 1493) are roundels again, and such are given in the painting by Ambrogio Borgognone (d. 1524) in the Certosa near Pavia. Both kinds must therefore have been employed beside each other at the same time, when linen cloth, paper, and skins of animals were disused. But the small round cut flat glass disks set in lead did not alternate with the cast roundels with a knob at the centre. (Compare the glazing with roundels and with square quarries in the windows of Palace Doge at Venice, on buildings in Vicenza and in Florence, in Fig. 236).

But mediaeval nailed shutters for closing windows are usually found in even the Early Renaissance, for which we have tangible proofs, indeed on one of the most important monuments, Palace Strozzi in Florence. There in the upper story are still preserved two of the old shutters on the rear facade of the Palace next the small Place. But they are not made by the rough method of grooving pieces together, or cut from a board, but are divided into frame and panels after the antique system, the one having five and the other three panels in height, when the framing is beset with three rows of iron nails (Fig. 237 hU. On Plate 425 of the drawings publicly exhibited in the Uffizi, the painted representation of the still existing Palace Antella in



Florence exhibits the old closures of the windows, which consist of partly sashes in folds for opening, (Fig. 237 g, i), partly of wooden shutters in which are but small square holes for admitting daylight into the interior. (Fig. 237 e).

Colored and white glass disks set in leads are retained in the 15<sup>th</sup> and 16<sup>th</sup> centuries with and without shutters and in the forms of round and lozenge quarries, as represented in innumerable miniatures and wood cuts, <sup>15<sup>th</sup></sup> but give place to larger pieces set in wooden sashes, and in the second half of the 17<sup>th</sup> century, we enter the modern era of the window; at this time the window was also freed from stone divisions and all superfluous woodwork, and the number of sash-bars was reduced. (Fig. 236).

*Note 153. For example in Lacroix, P. Moeurs, Usages et Costumes au Moyen Age et a l'Epoque de la Renaissance. Paris. 1671. The illustrations referred to are chiefly derived from the 15<sup>th</sup> century with a few from the 16<sup>th</sup> also.*

Maria de Medici made in Palace Luxemburg the first experiment with glass with facets set in silver bars, but this was little employed on account of its great cost. <sup>16<sup>th</sup></sup>

*Note 154. Such still existed in the Palace at Mannheim a few years since, but set in wooden sashes and having dimensions of 1.08 by 1.41 ft. with quite flat facets 0.98 inch wide., but owing to ignorance, they were destroyed during repairs. -- In the Palace at Bruchsal are rectangular pieces without facets (not indeed the old ones) 1.18 by 0.87 ft. in dimensions, set in wooden sashes on the principal facade, and in the great stairway vestibule are set in gilded leads.*

These rectangular white panes, set in wooden, iron, or lead bars, retain supremacy in varying dimensions until the middle of the 19<sup>th</sup> century, when these still larger panes with and without leads must likewise disappear, which in the most recent period have been again exchanged for the small leaded glass of Louis XVI, after the modern second poem of glass roundels has ceased to be heard.

Thus the old becomes new again, and to those among our architects and patrons, who participate therein today, we wish humor and cash!

The size of the glass formerly fixed its value, and the beg-





beginning of the production of large sheets was in the making of mirrors. Therein was first the endeavor to produce plates of glass that could reflect the human figure in its entire magnitude, like those mentioned by Seneca in ancient Rome.

Italy assumed the leadership in this; Venice had the monopoly of the manufacture of large plates of glass and supplied them to the entire world. But what men then understood as "great" would not be so esteemed now. In the inventory of Cardinal Mazarin is mentioned a Venetian mirror 27 x 22 inches (German), and one 50 x 65 inches was in 1759 still regarded as a wonderful work. A few years later, mirrors were already produced up to 78 x 47 inches, but the largest framed mirror possessed by Louis XIV measured only 52 x 24 inches. How valuable they were considered is shown by the fact, that the republic of Venice believed itself to have done a great thing in presenting a mirror to Maria de Medici on the occasion of the birth of Louis XIII. The value set on the manufacture is established by the calling of workmen from Murano at high wages by Henry II in the 16th century.

But mirrors played a part in the decoration of the apartments of the great and the rich. Thus Catharine de Medici (1589) had a cabinet (Cabinet of Mirrors), which contained 119 Venetian mirrors. Marie Antoinette had in the Trianon a bathroom with painted mirrors and a border "entirely in glass." The Late Renaissance, -- Barocco and Rococo, -- by preference made use of ornamentation by mirrors, frequently in the most charming, original, and happiest manner. On this side of the Alps are to be mentioned Palace Favorite near Rastatt, Palace at Würzburg, Palace in Pommersfelde, etc.

But with the system of glazing were changed the wood construction of the windows and their fastenings.

The account books of Fontainebleau (1536-1639) speak of opening leaves and distinguish between sash in one or two folds, as well as sliding windows from 1691-2 (now called guillotine sash); but they likewise contrast fixed with movable sashes. Sliding windows with sash-bars were made of both iron and wood. (On the City Hall in Rouen, for example, the glass is set in iron sashes. On the sliding windows and the hinged leaves,



there also occur in Italy movable hinged folds, as shown on Palace Antella at Florence. But the movable fold is placed outside the frame, which was already employed for shutters with a fixed glazed upper portion.

With the larger panes there are inside shutters used for security, folding readily into the jambs of external walls of ordinary thickness, and which received an artistic treatment, (Fig. 238), like the other ornamental and structural wooden portions of a room. (Doors, wainscot, paneling).

A practical and perfected execution was attained by the windows, window shutters and their fixtures only in the late period of the Renaissance, in the times of the Barocco and the Rococo, and only in a way, without any mediæval tendency, especially after this had entirely freed itself from that. Well considered in even the smallest detail, taking into account all peculiarities of the material concerned, allowing for all possibilities, these innovations in the internal architecture rise to become model works and dominate it in general and detail forms for 250 years until this hour. And no modern dwelling can dispense with them, be it kept within whatever style it may; for no one of understanding will wish to return to the system of closing the windows of mediæval dwellings for love of a stylistic caprice, unless he is willing to say to his friends, as Madame de Maintenon once said to Duke de Noailles (1705); "If I should remain long in the King's chamber, I should become paralyzed; neither a door nor a window closes. One is buffeted there by a draught that reminds me of American hurricanes." It shows a shocking ignorance of the development of affairs, blindness and hateful ingratitude to the antique world and the Renaissance; when anyone prints today:-- "In all arts and in handicraft, almost all problems were solved in the middle ages, and all types were created."

#### 173. Fixtures.

Sash frames and bars (where the latter were not made of metal) were always wrought from hard wood (larch or oak), the shutters in mortised work after the antique method, and the fixtures of the windows and shutters were of iron or bronze. (Brass).





Movable folds frequently still show in ordinary buildings fixtures with angle stops (but at right angles) and pivots, but in better buildings are always bands or the antique hinge-straps of iron or brass, where the hinge-pins project in view, while the straps are let into the woodwork and fastened by nails, whose small heads project and are frequently plain, sometimes even gilded. For thin wood, we likewise see screws employed (since 1650) in fastening parts of the fixtures. If the leaves are large, there also occur with the bands the sunken angles (so-called sham-hooks) at the angle joints of the wooden frames. 155

*Note 155. Well preserved fixtures of this kind are yet in the Palace at Bruchsal, where all parts are made of plain brass, while the woodwork is painted with an oil color.*

Fastening folding windows and their blinds was effected by small and simple arrangements of bars (handle and lever) or by sliding bars of the most diverse kinds (espagnolette and latch bolts). Handles and knobs frequently received a rich decorative treatment by the aid of gilding, and the rings of the bands as well. Shutters were mostly fastened by hinge-straps and latches, whose handles were developed on the inside as suspended movable rings, in order to require the least possible free space between the jamb and the shutter. These internal shutters were already taken into the domain of the general decoration of the room and were accordingly painted, gilded, and covered by ornaments.

#### 174. External Windows.

To afford greater security against draughts of air and extensive cooling of the surfaces of the glass panes during the cold season of the year, recourse was already had in the 18<sup>th</sup> century <sup>156</sup> to movable external windows opening inward (winter or double windows), when the permanent windows were made with a rebated ogee joint, the external ones having a simple ogee joint. (Fig. 238). <sup>157</sup>

*Note 156. See Blondel, J. F. Cours d'Architecture. Paris. 1777.*

*Note 157. From Blondel, Vol. 6, pl. 132, where the arrangement of this triple closure is given.*



## f. Entrance Doorways.

## 175. Principal Entrance Doorways.

The principal entrance doorways were subjected to similar changes in their treatment from the simplest to the richest as were the windows. Florentine palaces of the Early Renaissance (Strozzi, Riccardi, Pitti, Gondi) as a rule exhibit as enclosing the doorways, simply profiled and broad archivolts, frequently semicircular at top, with a ratio of from 1 to 2 to 1 to 2.5 of clear width to height of opening, and avoiding any further ornamentation. On Palace Rucellai are rectangular doorways; on Palace Vitelleschi in Corneto (Transition style) the entrance doorway is likewise rectangular and is crowned by a pediment resting on consoles, whose form is given in Fig. 15 on account of its restrained and modest details. Then follow the richer portals of the Lombard Early Renaissance, overloaded with ornaments and figures, enclosed by pilasters and antique entablatures, a magnificent example of which is given by the portal of the old Palace Medici, now in Castle Vecchio at Milan. (Fig. 10).

Likewise the abundance of small portals of houses in Genoa should not be forgotten, sometimes as delicate and refined in detail as Bramante's windows and ornamented by figure sculptures, sometimes enclosed between pilasters or candelabra-like detached supports with the corresponding entablatures. In Lucca, the beautiful entrance doorway on Palace Archbishop (Fig. 239) deserves mention as a charming work of the Early Renaissance.

Pilasters again give place to half, three-quarter, and full columns (Doria-Tursi and Durazzo in Genoa, Sciarra in Rome, etc.), and the single columns to those doubled with figures placed thereon (Palace Spinola in Genoa); angular and segmental pediments with reclining figures (Paleo Gambaro in Genoa) rise above the horizontal entablatures, and finally the portal columns again become merely supports for the balcony arranged over the doorway (Palace Franzone in Albano).

But instead of the columns first occur hermes caryatids, either in limited form, as on Palace Cippola in Brescia (Fig. 240), or in a freer and more animated manner on Palace Durazzo-Brig-





Brignole (Via Nuovissima) in Genoa, with half-figures growing out of consoles, supporting in a stooping pose with raised arms the portion of the entablature on which rests the higher balcony.

Unfortunately female hermes caryatids were employed on the garden portal of the Archiepiscopal Seminary in Milan (Fig. 241), recalling rather the idea of the figures on the Incantada in Salonici, rather than freely arranged decorative members after antique models. Instead of hermes figures, there also occur stumpy muscular complete figures supporting a balcony, which stand on high pedestals on right and left of the doorway of Palace Farzellini in Bologna; as unoccupied figures like guards, they are placed at the portal of Palace Rangoni in Parma (Fig. 112).

Grandly treated is the doorway, if a portico be placed before it, which has a horizontal entablature on columns and opens with an arch at the centre, as on a building in Perugia (Fig. 242), or on the Mercato in the same place, where the entrance into the arched portico is especially accented by columns placed before it. (Fig. 243).

This motive is translated into grandeur and is greatly effective at the passage through the portico of the Uffizi in Florence with the triple window over the arch and the figure standing there, as well as the two reclining forms. (Fig. 244). Vignola returns to simplicity in the portal of his Palace in Caprarola, which we reproduce in Fig. 245 from his original drawing, in which are shown the doors, with the transom and iron grille above them.

The decorative treatment of a portal must be designated as erratic, such as shown on the so-called Porta Bombardiera in Verona, where the columns at the sides are shaped like vertical cannons, which stand on the calfskin heads of drums and are covered at top by a plate, on which mortars rest as supports of the balcony. Weapons, trophies, helmets, powder-horns, and trumpets cover the adjacent shafts of the pilasters and the architraves of the doorway, while the balustrade of the balcony consists of small gun-barrels alternating with trophy-pedestals.

But the doorway of House Casa Zuccherò in Rome must be regarded as a jest, which is represented as the widely opened mouth



of a devil's brat, and a long nose hangs down over the round arch as a keystone.

#### 176. Doors.

Portals built of brickwork either exhibit simple members like the windows, or pilasters and caps of terra cotta in large pieces are also built there, as already referred to.

In harmony with the other structural means found to be for the security of the occupants of the house or palace, such as massive ground story walls with few openings, windows high above the sidewalk (except for shops), beginning of the residence of the nobleman in the upper story, gratings on the windows in the ground story, closure of windows by heavy oaken shutters beset with iron nails, etc., -- the doorways next the street experienced no further artistic transformation, particularly during the first period of the Renaissance, when men employed the same precautions for security in the unsafe political conditions of the time, which the middle ages had introduced.

We first find strong wooden doors, covered by iron plates, fixed on the wooden portions by nails and rosettes, in which a certain ornamentation was attempted by alternation and repetition. The leaves of the doors hung on heavy bands and pins; the fastening was effected by simple iron bolts (Fig. 246 e; from the door of a Palace in Genoa). Visitors had to gain admission by striking with the metal door-knocker (iron or bronze) to call the attention of the porter.<sup>159</sup>

*Note 159. Leaves of doors covered with iron plates are still found on Palace del Municipio, on Palace Franzoni in Albaro, and on Palace Gambaro, where a small entrance door is formed in the great leaf of the door.*

After the style of the old window shutters on Palace Strozzi were also those doors constructed, which permit the woodwork to appear externally, where recourse was had to the antique framed work, the panels not being made large, but the framework being strongly framed and beset by rows of nails (with round and pointed heads), for which a model may be found on the framework of the bronze door of the Pantheon. As an example of such simple doors, Fig. 246 a may serve, which was constructed in the monastery buildings of S. Lorenzo in Florence.





A perfected development occurred later, in which the plain panels were filled with richly carved rosettes, while the nailing of the framework was retained. (See Palace Guadagni at Florence, where the leaf of the door shuts into a frame beset by three rows of nails, as the section in Fig. 247 shows; further the similar and beautiful doors in the ground story of the Uffizi, where the nail heads are pear-shaped and a grated transom is placed above the leaves of the door).

Instead of rosettes, there are inserted painted panels on the courtyard doors of the Palace in Pienza, bearing a flower and a small crescent at top, but retaining the nailing of the framework.

But this kind was again changed; instead of it occurs carved framework, producing the most beautiful treatment of Renaissance doors, of which we reproduce in Fig. 238 that on Palace Archbishop in Lucca as the most prominent example. These strong forms are contrasted with the bizarre forms of the Barocco in the late period, whose beginning already appears in the hall doors of the Uffizi, which bear the arms of the Medici.

The Italians employed in France, who introduced the new architectural style there, continued while far from home faithful to the ground principle, to not lavish too much ornament on the street doors. Under Francis I were firmly retained the nailed framing at right angles with painted panels (House in Orleans), and the same is true under Henry III (House in Toulouse), even if between them also occur under Henry II leaves enclosed by small columns (House in Warborne). The structural and ornamental treatment first begun with Louis XIII, increased until under Louis XV, to again return under Louis XVI to the supposedly classic. Door panels with pediment caps, long panels rounded at top and bottom, perforated panels filled by carved wooden bars or iron gratings, an alternation of round, oval, vertical and transverse panels, adorned by medallions, delicately carved figures and heads, garlands of fruits, carved panels with cartouches, masks and the like, occur instead of the severe architectural forms, lighter construction instead of the doors for offense and defense, merely desiring to show elegant closures to prepare those entering for the likewise ornamental interior.



Note 160. See beautiful examples in Daly, C. *Motifs Historiques d'Architecture et de Sculpture d'Ornaments*. Vols. 1 and 2. Paris. 1869.

265 177. Door Frames and Metal Work.

In richer examples the leaves of doors shut into separate wooden frames, which frequently project 2 inches or more as wide frames into the clear width of the doorway; but they frequently in the antique way shut directly into the stone jams. They are hung thereto by pins and short bands; but the fixtures required for closing or opening the doors are never left visible; in no case do the latter occur in an obtrusively ornamented art form, nor do the simplest disturb or cross the surfaces and mouldings of the woodwork at all.

The woodwork was during the early period left in the natural tone, merely being oiled and varnished, but was painted with oil colors in the period of decadence. Where metallic coverings occur, these were necessarily painted in colors on account of rust. Raised ornamental patterns on plate coverings are to be found in Genoa, for example.

178. Door Knockers.

In all phases of the style, the door-knocker continued by preference an object for artistic treatment, whether it was made of dull iron or the more valuable bronze. Male and female figures of deities, forms of animals, (Neptune with sea-horses or dolphins), fanciful beings, masks and plant-forms, were combined into charming and very prominent objects of the minor arts. Venice, Verona, and other cities preserve a wealth of such peculiar inventions of Renaissance art. We give two simple examples from Rome, one from a private house, the other from Hospital S. Spirito. (Fig. 248).

g. Niches.

179. Form.

Besides windows, where the axial distances are greater, either rectangular recesses, segmental or round-arched niches animate the window openings, chiefly intended to receive figures, but these did not always reach their places, just as is now the case.

Palace Bartolini (now Locanda del Nord) in Florence exhibits





on the four piers of its facade with three windows with this motive, that the Renaissance borrowed <sup>161</sup> from Late Roman art, executed in a systematic and effective manner. (Fig. 249). The shell is employed as a characteristic motive for its decoration (exactly as in the antique period), its base being either at the centre of the semicircle or at the crown of the arch, from which it develops ribs, whose ends produce in the front elevation small projecting semicircles (Fig. 250; shell from S. Andrea in Rome). But we also find this charming architectural motive again upon wide intermediate piers and broad angle piers; thus, for example, on Villa S. Columba in Siena, on the piers of the Uffizi in Florence, on the angle piers of the Mercato there, then with a specially wrought standing place for the figures. The imposts of the niches with shell decoration are accented by a plain band or by richer mouldings.

*Note 161. Compare Part II, Vol. 2, Art. 264, of this Handbook.*

Rectangular flat niches are also tried as suggestions on the window piers of Palace Pandolfini, while they are deeply recessed on Palace Bartolini, perhaps intended for the reception of ornaments. (Trophies or decorations). They have more the character of paneling on Palace Pandolfini.

The further animation of the wall surfaces by pilasters, columns, and caryatids, has already been considered for palaces and houses, and the construction of the facade surfaces of dressed ashlar, rough stones, and of bricks, its covering with majolica tiles or stucco, its decoration by sgraffito, shaded and fresco painting, its animation by stucco ornaments, mosaics, and by veneering with colored marbles of all kinds, have all been mentioned in Arts. 37 to 43, so that we have only to refer to them here on account of their combination.

#### h. Balcony.

##### 180. Balcony.

The balconies, which lend further relief to Renaissance facades, either extend along the entire facade of a building, or are limited to certain parts, or to merely a window. Palace Pitti has the continuous balcony on both its upper stories, and Palace Uguccioni has one of these in the second story.



These balconies are constructed by the projection of a cornice beyond the lower wall and by the recession of the wall of the upper story, whereby a not too strongly expressed separation of the different stories from each other is produced. A greater degree of safety in the use of the balcony slab has a bearing on the solid wall of the lower story (Fig. 251). Even greater security results from the but slightly projecting balconies on Palace Pandolfini, where they rest entirely on the masonry. (Fig. 252). Such arrangements can only be executed on thick walls; with those of less thickness, recourse must be had to the projecting balcony, like that common in the entire South and which has also become naturalized with us in the North. This consists of stone slabs usually projecting 2.95 to 3.28 ft., the supporting consoles and the balustrade. The slabs generally correspond in thickness and profile to the belt between the stories, are smooth or have shallow coffers on the underside, (Palace Lascia in Venice), and according to the extent of the balcony, they are supported by at least two or more consoles frequently coupled in pairs. (For example, of 6 pieces on Palace Labbia just mentioned).

#### 181. Balcony Supports.

The supports of the balcony are in their artistic forms either to be referred to a preceding wooden construction, to stepped and corbelled wooden beams, that terminate at the ends in the customary volute form, as shown on the roof cornice of the Bigallo, on the roof of the facade of the Cathedral in Pisa, or they are composed of large volute consoles, especially employed by the Late Renaissance. (Fig. 254). The consoles or projecting beam ends were also in an effective way supported by columns or caryatids, when the balcony was placed over the entrance doorway, as already referred to in Art. 175.

#### 182. Balustrade and Railing.

Following mediaeval tradition, balusters during the Early renaissance were made of stone and in the form of little columns, which were placed in a definite arrangement with angle and intermediate pedestals and were finished by a heavy moulded cap; they then almost invariably stood directly on the balcony slab without the interposition of a special plinth. Their height





was usually 3.28 ft. or even more. The little columns sometimes belonged to the Doric, sometimes to the Ionic or Corinthian order, the shafts being smooth or fluted.

The little columns gave place in the time of Giuliano da Sangallo to the so-called balusters, a form of free support peculiar to the Renaissance. Nothing like it in antiquity nor in the middle ages. Antique candelabra forms are contained in it, but they are employed in a different sense. They exhibit sometimes an appearance of striving against the load, sometimes that of being compressed by it, or both of these extend outward from a neutral middle portion, one directed upwards, the other downwards. Like columns, they also belong to different orders. D'Aviler distinguishes between Tuscan, Doric, Ionic, Corinthian, and Composite balusters; his countrymen subdivide them into "en piedouche, cannele, a double poir, a ceinture, a pans, rustique, en urne, a retours, en vases." Besides those of round section, there also occur others of square or rectangular section; compressed and extending forms are frequently employed on Venetian buildings beside each other, as well as those less happily ornamented by masks, for example, on Palace Pesaro in Venice, and besides the simple and plain treatment of the surface, according to the nature of the material, there is found the richest decoration of the different parts of the baluster. Instead of architectural supports, free forms also occur for the same purpose.

Perforated balustrades between the stone pedestals as parapets are shown by the balcony on Palace Contarini in Venice, and a parapet with decorated slabs, on which weapons, chimeras, Medusa's heads, etc., are sculptured in strong relief, appears on the balcony of Palace Cippola in Brescia. (Fig. 255). The small balcony on Palace Cancellaria in Rome has similar parapets of solid stone slabs with sculptured weapons and ornaments.

A balcony railing entirely made of iron with beautiful workmanship exists on Palace Bevilacqua in Bologna. (Fig. 167). The balcony is arranged at the angle of the building with a view along the two street facades, with the use of a diagonal support and a small exit doorway, is found on Palace di Diamanti in Ferrara. The pedestals of the balustrade frequently receive



special ornaments, for example in Venice crouching lions, a motive borrowed from the middle ages.

j. Bay Window.

183. Dissemination and Examples.

Bay windows in private houses are mentioned in Grecian and Roman antiquity; Arab architecture made the most extensive use of these projections, which animate a facade more expressively than the balcony. Whether and how widely the Early Renaissance employed these structures is now hard to say; that care was taken to remove them, wherever existing, has already been stated and the reasons for this given. The architecture of the grand style could not indeed begin too commonly with this addition, which was such a favorite in the late German middle ages and in the German Renaissance, and which has today come again into honor in more frequent use, though not always improved in design, in all historical and unhistorical styles.

On the smaller buildings and with stories not too high, the bay window on the exterior will always remain an effective piece of decoration, and how the Italian masters may have done in given cases may be shown by the well known pretty bay window in Dijon. (Fig. 256).

As a bay window of the good period of the Renaissance may be taken in Florence a moderately large open projecting structure, but which does not project freely from the facade, but is rather placed in a sheltered location at the recedant angle of two buildings. It rises on projecting stone beams with a balustrade on two sides and a stone column at the angle, which receives the wooden architrave and coffered ceiling extending from the external walls. A small door in the wall permits access from the house to the bay window; above the doorway itself proudly appears the arms of the Medici carved in stone. It is a well known small architectural fragment, that is indeed to be found in most sketch books of architects visiting Italy, and which was in recent times made known by Gnauth in the work here mentioned. (Raschdorff).

At the time of the carnival, the balconies of the palaces on the Corso in Rome were and still are transformed into bay windows by erecting on the stone balustrades of the balconies pret-





pretty glazed and roofed wooden structures, which provide the occupants and their guests with a protected position during the duration of the carnival amusements in the street.

Similar to these are likewise the two still remaining covered balconies in Ferrara, on the Castello and on Palace Roverella. The bay window on the latter was indeed not a work originally designed for the stately brick facade subdivided by pilasters. For the entire width of the wall between two pilasters, it projects in the form of a half octagon above the main entrance portal, recklessly intersecting the beautiful terra cotta frieze and the architrave between the second and third stories. It is constructed of woodwork painted brownish-yellow; the angle supports are formed like small Corinthian piers, the interspaces are filled by large glass windows, the lower part contracted in ogee section without any decoration of the surfaces and painted the same color as the wooden portion; the hip roof is not very steep and is covered with smooth metal painted Slate-gray; at its apex stands a bronze colored eagle with extended wings. The exterior appears to have been based on impressions received on this side of the Alps; it might just as well exist in the Tyrol or in Nuremberg. <sup>163</sup> Concerning the bay windows on the Palace in Ferrara, see Art. 216.

*Note 163. Published in Müntz, E. Histoire de l'Art pendant la Renaissance. II. Italie, l'Age d'Or. Paris. 1891. p.428. (With the incorrect location "Florence" instead of "Ferrara.")*

Not on houses, but on princely palaces, have further examples been preserved, and indeed on Palace Ducal in Urbino. Between the round towers of the narrow facade, an open bay window extends through four stories, showing a closed substructure in the ground story, but open above this and spanned by semicircular tunnel vaults, its facade ornamented by Corinthian columns with perforated balustrade inserted between them. A volute cap with an eagle crowns the uppermost story above the antique-like principal cornice. (Fig. 293).

A bay window resting on consoles, with richly decorated parapet, angle and middle pilasters, and an ornamental main cornice, but only intended for a single story, was executed on one of the longer facades with such noble details and in such happy



proportions, that it may be mentioned as a model and as characteristic of the style.(Fig. 257).

k. Loggia.

184. Dissemination.

As another architectural motive serving for the same purpose should be mentioned the loggia. It affords more space for an assemblage of persons, an absolutely secure standing place, and protection from rain and sun. It was already in Venice during the middle ages a favorite architectural arrangement and forms a characteristic motive on the Venetian palace and house of that period, as well as during the entire duration of the Renaissance and till this hour. It must have made its way from Venice to the rest of Italy, for it then enjoyed a constant preference in especially the villas in Tuscany and likewise in Southern Italy, also reappearing on the largest palaces, for example, Palace Farnese in Rome. One is constructed in a modest yet expressive way on the Vigna di Papa Giulio outside the Gate Porta del Popolo in Rome.(Fig. 158).

The open loggias of Tuscan palaces, built like a story, must not be confused with it, for on account of their elevated position, these have nothing to do with the purpose of a balcony or a place of observation for enjoying the life of the street.

The loggia here mentioned must be taken to be a protico before and connecting the best living apartments next the street.

l. Balustrade and Attic.

185. Balustrade.

In both public and private buildings, the facade always terminates in height with the principal entablature: a stronger accenting of the upward ending was frequently sought, like a dying out of the masses. Fra Giocondo sought to accomplish this on his Palace della Ragione in Verona by placing free statues at regular intervals, which had already been tested on the main cornice of the middle aisle of the Cathedral in Siena. The arrangement looks rather shabby. By placing a balustrade, consisting of base, pedestals with interposed small columns or balusters and a continuous cap, above the principal entablature, the upper termination becomes more effective and imposing, and this may then be heightened by placing free figures on the pedes-





pedestals, by which is produced an effect similar to that attained by Gothic architecture by the setting of finials. Compare in this sense the upper endings on Palace Communale in Brescia, on the Basilica of Palladio in Vicenza, on the old Library of S. Marco in Venice, and others.

#### 186. Attic.

But the closed attic of the Roman triumphal arch always remains the most expressive ending of a monumental structure; it becomes more imposing by placing figures before it and by the arrangement of reliefs and tablets with inscriptions. Its effect is again lessened by the insertion of windows, even if this occurs in a very modest way, and is weakened, where the enclosures of the windows are too strongly expressed. The termination is accented to excess, if with or behind the balustrade there be arranged a low story for use, as frequently is the case on the palaces of Palladio, when the balustrade must give place to the solid wall with windows. (Palace de Porti, Palace Valmarana, in Vicenza). A higher, recessed attic story is constructed on Palace del Monte in Bologna. Another kind of superstructure with battlements above the principal entablature on Palace Venezia in Rome has already been mentioned (Art. 100), which is executed in an energetic way also on Palace Malagutti in Bologna, but not for esthetic or practical reasons of use, rather for defense in case of political strife in the city. This terminal motive is doubled, when above the windowless attic is also placed a balustrade, as occurs on Fountain Trevi in Rome,

#### m. Pediment and Belvedere.

#### 187. Pediment.

The antique pediment scarcely appears on the dwelling in the good period of the Renaissance. The late masters first employed it, but with a certain eccentricity. Almost none of the villas of Palladio, nor of his palaces either, is to be conceived without one of these, not indeed merely over the porticos, but above certain parts of the building, supported by columns or rising from the plain wall surfaces. Palace del Tribunale in Bologna, Palace in Caserta, some buildings in Milan, Villa in Poggio a Cajano over the portico with columns, and Palace Contarini in



Venice over the loggia, etc., exhibit them, but mostly in a very modest way.

The tympanum is then commonly ornamented by a great coat of arms with foliage and scrolled bands, while the three angles of the pediment (two ends and the apex) are emphasized by free statues, especially by Palladio.

Church architecture usually retains the pediment as a most expressive motive.

#### 188. Belvedere.

In the sky line of the dwelling, the loggia-like structure extended above the roofs, the loggetta, also frequently corresponds to the belvedere. On a closed substructure, that projects above the tile roof and is of rectangular or square plan, stand square masonry piers connected by plain arches or by architraves, and they support a low hip roof, thus forming a room open on all sides, which serves as an observatory, or frequently as a drying room or for housekeeping purposes. The belvedere appears to have been considered an indispensable addition to villas. An artistic form appears on Villa Lante in Bagnaja, on Villa Medici in Rome, etc., and a plainer form on the two country villas in Bellinzona and in S. Gervaso near Florence. (Figs. 179, 181).

But the belvedere may also form the termination of the wall enclosing a garden, as shown by a charming example on the street outside Gate Porta Pia in Rome. (Fig. 259).

#### n. Chimney Cap, Dormer Window, and Roof Covering.

##### 189. Chimney Cap.

Another addition above the roof is formed by the chimney cap, though this is of doubtful artistical value. They are and continue to be a necessary evil for flat roofs and best retain their merely useful form, which men are satisfied with in almost every case. An artistically imposing treatment, which occurred during the French Renaissance, retaining the high mediaeval roofs, was forbidden to the Italians, and what they undertook in this direction was of not much value. Vignola built a chimney with a cap in the Villa Papa Giulio near Rome, which Letarouilly first made known (text, p. 454); Serlio gave others (Book VII of his work on Architecture) of square, octagonal, and circular external forms, where the smoke sometimes escapes from the apex, some-





sometimes from the side openings; he expressly says of them; "sono al costume d'Italia." but he says of another somewhat strangely constructed one, that it is "alla Francese anzi io non ne vidi mai simile." We give some of the former in Fig. 260. Rubens, in his work on the Palaces of Genoa (Palace Spinola or Prefettura), gives representations of chimney caps above the roof, whose beauty must likewise be considered doubtful. The most remarkable of these are also shown in Fig. 261. G. M. Urbani de Gheiro (1892). An entire pamphlet on Venetian chimney caps with the addition of 320 drawings by Luigi Lonza. According to the forms, there are distinguished:-- la Campana, Campana schiacciata, Forchetta e il Tridente, le forma Classiche, le Mostuosita! Truly a pretty collection, from which a selection is to be found in Fig. 261.

#### 190. Dormer Windows.

Dormer windows are variously explained in Serlio's Book VII, but always only in connection with steep roofs; hence these manifest a France character throughout. <sup>167</sup>

*Note 167. Everything necessary was said concerning dormers in Art. 124.*

Dormers have a square or rectangular window opening; the enclosure is plainly moulded and supports an angular or segmental pediment cap. Round-headed windows in rectangular enclosures with segmental caps were likewise constructed. <sup>168</sup>

*Note 168. See Serlio, Book VII, p. 163.*

#### 191. Roof Covering and Form.

The vaulted and externally plastered roofs of the small houses in the South (vicinity of Naples, Capri, etc.), the low antique red tile roof with flat and concave tiles, the covering of plane roof surfaces with sheets of lead (Venice) and copper, the covering of the surfaces of vaulted roofs with the same materials (Cathedral in Florence, Pistoja, S. Peter's, Basilica in Vicenza, etc.); the defective method of conducting off the water, the omission of collecting gutters on cornices of stone or wood, the covering of strongly projecting belt courses with tiles (Uffizi in Florence) set on a bed of mortar, -- these have already been treated and are merely repeated here on account of the general description.



## 192. Heraldic Ornament.

An ornamental addition of importance consists of the massive stone shields of arms of distinguished and princely families on residences and public buildings. Everyone took care that his name should be transmitted to posterity in a monumental way with the building erected by him. In the affixing of the arms of families, the Renaissance followed a mediaeval custom, which was in that period expressed in a more restricted manner, but was more freely conceived and utilized in the new art, and was especially embodied at a larger scale. The plane or slightly swelled, elongated triangular shields with the point downwards disappeared and gave place to more flexible forms; tilting helmets with spreading ornaments (beautiful examples are on the vaults of the Bargello and of the Loggia dei Lanzi in Florence) vanish, and in their place appear cardinal's hats with conventional symmetrically arranged tassels, the papal tiara with the massive keys of S. Peter, or open ducal coronets and the cap of the Doge of the Republic of Venice. The oval form, surrounded by rich cartouche work, was the preferred form of shield.

Apparently suspended from stone consoles (of volute form) with flying bands, the shields of arms decorate the angles or surfaces of buildings. (Compare in Fig. 262 the massive papal shield of arms on the angle of the Palace Archbishop in Florence).

## 193. Metallic Decorations.

As metallic decorations, mostly of painted iron but elevated to art-works by artistic hands, we have to mention on residences, especially in Tuscany, torch and banner holders, tie-rings, holders for receiving window gratings, and the lanterns.

The lanterns already on Gothic buildings and on those of the transition style form a portion of the smaller ornamentation of the facade, as shown by that in Fig. 263 from Palace Vitelleschi in Corneto. What the improving period of the Renaissance made of this Gothic primitive form, or how it was transformed into an art-work, is shown by the lanterns of Palace Guadagni and of Palace Strozzi mentioned in Arts. 91 and 93. We give an illustration of the latter in Fig. 264 and in Fig.





265 one of a standard holder with a tie-ring; the latter may be designated a masterpiece of the smith's art, beside which can only be placed similar pieces in Siena.

Somewhat inferior, yet interesting, are the holders on Palace del Podesta result. (See Fig. 166). Of the gratings on the windows of Palace Vitelleschi, a representation is given by the corresponding illustration in the work mentioned in Note 7(p.13).

p. Internal Architecture.

194. Internal Doors.

The doorways in the interiors of residences always form vertical rectangles of the proportions of about 1 to 2, sometimes somewhat more, sometimes rather less. The enclosures are either plain or subdivided and profiled in the style of external window enclosures, thus having antique-like architrave members with or without ears (for example: with ears on the doorway architraves in the Hall of Leo X in Palace Vecchio at Florence), of tolerable width, which frequently amounts to  $1/4$  or  $1/5$  the clear width of the opening of the doorway. The enclosures are more richly treated with accessories like those mentioned for windows, by consoles with horizontal or pediment caps, both often merely painted on beside the architraves in relief, (Doorway at the end of Raphael's loggia,), or they are enclosed by columns with antique entablatures and pediments (Hall de' Ducento in Palace Vecchio at Florence), or in the most costly manner in the Anticamera of Palace Doge in Venice with reclining figures above the pediment. The enclosures are then not always of the same material as the leaves of the door, but are frequently made of the most costly and richly colored kinds of marble (Palace Pitti in Florence, Anticamera of Palace Doge), and by the omission of all mouldings on the architrave, these have a magnificent effect (Palace Pitti in Florence).

According to the dimensions of the clear width, the openings are closed by doors in one or two leaves, made of light and heavy woods, executed in paneling after the antique manner, divided into frame and panels. The preceding period does not show true joiner's work on doors and cabinets, but rather matched wainscot, whose surfaces are mostly ornamented by paintings carelessly intersected by iron fastenings. In the 14th century true paneled joiner's work first takes the place of



matched wainscot. The panels between the thicker framing then have at first the width of a board. (7.1 to 9.8 ins.).

Serlio mentions in Book IV (Chap. 10) of his "Architecture" single doors with 4, 5, and 6 panels, such as still continue in use, and double doors with 3 to 5 panels in each leaf. In both cases the leaves swing on hinge-straps.

Walnut and chestnut are preferred as materials for richer doors, pear-wood and cypress-wood being used more as inlays; yet the needle-leaved woods (larch) are not excluded from ordinary uses.

27 The fastenings are let into the woodwork, only the hinges of  
28 the straps remaining visible; the fastening is concealed or only appears by a small escutcheon. (Doors of the Loggias of the Vatican, Door of the Hall in the Palace del Comune in S. Savino).

Double-thickness doors occur for large and small doors in the Early Renaissance, when intersecting frames are fixed on a smooth matched wainscot, forming externally rectangular, square, or lozange panels. The latter then usually show the mode of fastening them together, iron pins set in regular rows, with plain or decorated panels, as Fig. 246 presents after the model of a small cell door in the court of S. Croce in Florence, the larger doors of Chapel Colleoni in Bergamo and of the former Bank of the Medici in Milan. The lighter wood of the larch was preferably used for the larger leaves of doors: the large door leaves then swing on quite simple and rudely wrought rollers or turn on pivots like antique ornamental stone or metal doors (Fig. 246). The doors of middle size in the state apartments of Palace Doge in Venice in part swing on hinge-straps with nails; they are also partly furnished with semi-Gothic long iron straps, which are then entirely gilded. For vertical and horizontal fastening bolts on the doors mentioned, these were limited to the simplest forms. for the purpose, all ornament being omitted; only the knobs for sliding them and the handles of the keys exhibit an artistic treatment. (Fig. 246).

In the simplest forms of doors, both the framework and the panels remained entirely plain, whereby the transition was made from one structural wood to another by ogees and bevels, or in richer forms <sup>the</sup> framework remained plain and the panels were





covered by carved work (Loggias of the Vatican), or both parts,-- panels and framework, <sup>170</sup> were carved, the intersections beset by rosettes, as shown in a magnificent manner by the already mentioned door of the Palace in Monte Savino <sup>170</sup>, more stately and nobler became the treatment, when framework and panels remained plain, only the mouldings of both being ornamented with the addition of rosettes. As examples may serve the simple and noble door of Library Laurenziana in Florence, each leaf with three equal panels of walnut wood, and various doors in Rafael's Stanzas with 5 and 6 panels with fretwork and carved branches on the framework, beaded astragals and heart-leaves on the cymas, half-rounds and quarter-rounds. (fig. 266). <sup>171</sup>

*Note 170. Published in Geymuller.*

*Note 171. Compare Redtenbacher, R. Vorbilder für Tischlerarbeiten. Collection of selected joinery works of the Renaissance in Italy. Abth. 1. Carlsruhe. 1875.-- Unfortunately in this otherwise accurate publication, everything is not given, that might structurally be desired; nowhere is there given the thickness of the wood, the manner of its connection, and nothing about wheer and how the leaves shut!).*

Double doors are beautifully divided by inserted round panels ornamented by heads of lions with a knocker ring in the mouth (fig. 267), as shown by the entrance door at one end of Raphael's Loggia, a masterpiece of work, as required by the composition and section of the ornament. The longitudinal panel adjoining the round panel is represented in Fig. 268, and the entire door with its enclosure in Fig. 266.

The woods are generally left in the natural color, oiled and varnished, or also stained reddish-brown, yellow, or dark-brown, and then waxed.

Instead of reliefs, intarsias occur on framework and panels in the earliest period, i.e., inlays in woods of different colors, to which are frequently added inlays of metal, mother-of-pearl, ivory and ebony. Of metals, there are employed gold, silver, bronze, copper, tin, together with precious stones also.

(Stained woods in combination with metal inlays to a small extent, for example, on the backs of the choir stalls of S. Domenico in Bologna, which are wonderfully graduated in colors in intarsias).



This art extends back into high antiquity; it reappears in the middle ages; we find pieces of furniture executed in this way in the inventory of Charles V (1380) and of the Duke de Berri (1416), we see it in Italy in the earliest period of the Renaissance already in the highest degree of perfection.

Yet we must here distinguish between incrustation and marquetry. In the former, after the ornament is drawn, the wood is cut out to a certain depth and then filled with a more or less precious material, in the second, veneers of wood, mother-of-pearl, copper, etc., are laid on each other and sawn through at the same time, afterwards being inserted in each other according to the drawing. Thus intarsias and counter-intarsias are produced, so that the same design may have light on a dark ground or the reverse. The veneers are applied to the structural parts.

*Note 172. Drawings of intarsias of natural size are found in Gruner, L. Specimens of Ornamental Art. London. 1850. -- Also in Teirich, V. Ornamente aus der Blüthezeit der Italienischen Renaissance. Vienna. 1878. The accompanying text affords interesting conclusions concerning the occurrence and history of intarsia work in Italy before the 17 th century. The execution of the intarsias is plain. The veneers are said to be a little over 1/16 inch thick and the ground to be 1/8-8 ins.*

Until the end of the 14 th century, marquetry consisted of geometrical patterns, mostly executed in black and white; after the beginning of the 15 th century and by the aid of stained woods, landscapes, architectural interiors, and historical pictures were produced, to which was added all the wealth of wood-carving and of metal inlays. (Tortoise-shell and gilded bronze, the so-called Boule furniture. Andre Charles Boule in the 17 th century).

A last degree of ornamentation was attained by painting the leaves of doors in different colors with the gilding of certain parts, gladly employed by the Barocco and the Rococo. (Wood color and gold or white and gold, also with green, red, and black coats of color with the ornaments touched up with gold). The High Renaissance busied itself with painting grotesque ornaments, flower bouquets, figure compositions, still-life pieces,





and landscapes, which covered most large panels.

The structural parts are sensibly joined together, treated, and ornamented. Eccentricities, such as occur in the German Renaissance, are not found, as for example, where mullions are formed like pilasters or half-columns, which instead of being fixed and supporting something, swing in a circle! If a moulding covering the joint of the folding doors is arranged, this is treated without making prominent the top or bottom. (Compare the doors in the Loggias of the Vatican).

### 195. Paneling.

Adjoining the doors is the paneling of the walls, which may extend to the ceiling or merely cover a portion of them to a certain height, being carried around the room to the top of the window-sill or only considerably lower. Breast-high and base wainscoting is our usual name for the two kinds of paneling, called wall-paneling or woodwork in France or paneling in North Germany. Where this paneling does not extend to the ceiling or merely to mid-height, it commonly forms the base for the ascending mural decoration. The division of the walls of living apartments into base, with or without subdivision into panels, and a frieze with a crowning cornice, is as ancient as architecture itself. All peoples of antiquity proceeded according to the same law, as well as the middle ages and the Renaissance afterwards, just as the most recent period likewise holds fast to it. Yet the execution of panel-work was not always carried out on similar basal principles. The ancients, as well as the Byzantines, the Arabs, and the masters of Romanesque architecture, considered it as a surface decoration like a rug, or in dividing it into framework and panles, i.e., in the acceptance of joiner's work, they proceeded according to the law clothed by Semper in these words:-- "The framework and lattice-work should never dominate the panel-work, i.e., the panels; these should remain the chief thing, the motive proper, and they should accordingly be treated like a fabric and be richly developed; the enclosing structural elements should serve, and not subjugate them."

The Gothic likewise adhered to this principle during the first period, while it did not overpass the true bounds of the struct-



structural; then it fell into the desolate form of blind tracery for covering walls.

The Renaissance broke with this monotonous idea and returned to the ancient artistic idea, when it again conceded to sculptors and painters participation in this interior decoration. It adhered to this, as already stated, even in the doors constructed on the same principles.

As in them, the framework and panels were of costly woods covered by marquetry, painting, and gilding, left in the natural tone of the wood, or covered by plain coats of decided color. The Italian masters (Serlio, Primaticcio and others) employed in France proceeded similarly, and the native ones likewise. (Chateaus of Fontainebleau, S. Germain, Anet, and Gaillon).

The entire 17th century in France embraced the fashion of ornamenting the paneling with gilding and painting. Marshal Richelieu had the panels painted with obscenities ("very immodest figures in relief in the centre of each panel"), -- an unworthy ending of so good a mode of decoration.

In the year 1751 was introduced glass painted on the back instead of wooden wainscoting, with all kinds of genuine and imitation marble. With the adoption of the Gobelins tapestry for mural decoration, the wainscoting had to disappear or sink to make breast-high wainscot or to become lower base woodwork.

The ground principle of arranging the wainscot with large panels is expressed in the assembly rooms of Palace Doge in Venice. (Hall del Collegio, Hall del Senato, Hall del maggior Consiglio, and in the Anticamera). Pilasters there generally divide the smooth red surface of the woodwork, whose decorative members are enriched by gilding. The greatest simplicity prevails in the joinery, in the wainscoting of these rooms, which is furnished with simple seats, above which is developed the highest ornamental magnificence ever created. Just this contrast between the simple substructure and the splendid upper part perhaps allows the latter to appear so much more effective and grand. The like is found in Hall de' Ducento of Palace Vecchio in Florence. What other period than that of the Renaissance could have created such? What other art ever employed this wealth of means of expression and by such masters?





As a production of the higher style may be designated the decoration of the cabinet of a prince, the Duke of Urbino, in which the wainscoting exhibits the most perfect and the richest intarsias. This is equaled by the choir stalls, the desk, the doors, and the tribune of the Cambio (Mint) in Perugia, (Fig. 269). executed by Domenico del Tasso (1490-3). A Benci-vieni da Mercatello and A. Masi (1562), the harmonious, moderately large, vaulted apartment being filled by the paintings of Perugino (1499) on the ceiling. "No officials in the world are so splendidly seated as is the court of exchange of the chief city of Umbria", says Burckhardt with justice.

To the 16th century belongs a more architectural than ornamental great series of stalls, 8 spaces of which still exist in the great hall of Palace Pretorio in Pistoja, a splendid work, but which was not originally intended for that place, but rather belonged to the choir of the Sapienza, according to an inscription carved on a stall. The over ornamented columns resting on consoles, the overloaded cornice, the richly sculptured frieze and framework are contrasted strikingly with the plain panels, which must have been treated otherwise before the work changed its location. (Fig. 270).

#### 196. Decoration of the Walls.

The wall surfaces were smoothly plastered in living rooms, painted and stuccoed, then hung with tapestries or covered by leather hangings, and for elegant apartments and especially in the Late period, they were covered by woven fabrics of all kinds, and finally with painted or printed papers. Some rooms of the Castello in Milan still show the mediaeval mode of treatment of surfaces, for example, patterns that appear like red wafers arranged beside each other and adorned by heraldic insignia, extending uniformly over the walls and vaulted ceilings, and the like. The Borgia apartments in the Vatican are again made accessible, and they afford to us a trustworthy representation of mural decoration on smooth plaster. In the Hall dei Misteri, the walls are divided into panels, that extended to the floor (the walls being without a base), and which are separated by pilasters with panels of colored grotesques on a



gold ground. The panles were indeed themselves painted with golden linear ornament on blue and greenish grounds, and they were also restored in that manner. In the Hall dei Sante, a high wainscoting with a bench before it forms the base of the wall; this is subdivided into two rows of square panels above each other, whose grounds are alternately decorated by ornaments and architectural details; above this and to the ceiling cornice is painted a tapestry pattern. In the Hall delle Arte Liberali is a peculiar division into panles with colored geometrical figures, executed with round disks in the frieze with interwoven bands, just as are found in the Early Christian mosaic floors in churches, and in the great Hall dei Pontefici, beside panels with tapestry patterns, there are arranged mural paintings with arabesque borders. In the Hall del Credo these again occur, subdivided into panels with tapestries of geometrical patterns, at the centre of which is placed a circle containing the papal arms.

Mural paintings in fresco (1481) were separated by pilasters or enclosed by arabesque borders, which were mostly painted gray on gray or brown on brown with gold ornamentation, to which the borders with grotesques gave place some 10 years later (Porgia apartments, 1493), followed these fabrics decorated by lines or flowers. Such mural decoration is executed in a perfected way in the central hall of the Royal Villa Poggio a Cajano, in the Hall de' ducento (Senate of 200 in Florence) of Palace Vecchio, and ther likewise in the Hall dell' Udienza above a painted high paneled base of imitation marble, charming grotesque ornaments on a light ground covering the entire surface of the walls, in the Apartments of Leo X. Instead of figure compositions, there sometimes likewise occur pictures of cities and landscapes (Palace Vecchio). In Venice and Verona (Vigna Bocca-Tuzza) in place of large figure pictures, is arranged a fræze 6.56 ft. high and beginning directly under the ceiling beams, with colored figures on a dark ground, extending around the entire room, when the surfaces of the walls are covered by a plain coat of a single color. In a room of Casa Vasari in Arezzo, the wall surfaces are divided into two parts in their height, the lower being covered by wainscoting





and the upper decorated by landscapes within painted borders surrounded by festoons; the allegorical figures appear rather to be an addition.

With the discovery of the Baths of Titus arises the combination of stucco and painting, the most beautiful example of which is presented by the wall surfaces of the Loggias of the Vatican. As mural decorations, where the pictures are enclosed by architectural strongly profiled stucco borders, the caps of the window niches being likewise strongly profiled, ornamented by pediments, arms, cartouches, reclining figures, garlands of fruits, medallions and busts, may be mentioned the Hall of Leo X in the Apartments of Leo X in Palazzo Vecchio in Florence.

Painted walls become uncommon as tapestry becomes the usual fashion, and which soon supplanted all other modes of decoration, where means permitted and where men could, or wished to be in fashion; it is not to be denied, that halls and living apartments by its use became rather warm and homelike, which from the first assured to it great success. (Fig. 271). It was a fabric woven from twisted yarn, woolen, mixed with gold and silk; the oldest was produced in Arras, from which it received the name of Arrazzi in Italy. (Arras in England). Even in 1380 was mentioned a battle picture in the inventory of Charles V, --"a great cloth of work of Arras",--; in the accounts of the Prioress of the Hospital Hotel Dieu in Paris (1395) was included fabrics of Arras, and what was called in the 14th century "cloth of Arras" was nothing more than "tapisserie de haute lice". In the inventory of the Bastille in 1420 was mentioned a coverlet with black ground, woolen tapestries from Arras, and others of silk and gold.

The manufacture was stopped by the siege and cruel treatment of the city by Louis XI, and tapestry had ceased in Arras by the end of the 16th century.

Two Flemings, de Coumans and de la Planche, introduced it into France in 1625, and the manufacture was taken into the possession of the State by an edict in 1667.

The tapestries of Raphael (1515-6), intended for the lower portion of the walls without paintings in the Sistine Chapel,



were executed in Brussels in wool, silk, and gold. Copies of these arrases until 1859 adorned the walls of the Stanze dell' Imperatrice in Corte Reale at Mantua. (Now in Vienna).

The hangings mentioned at the beginning, made of stamped and gilded leather, that indestructible material, disappeared toward the end of the 16<sup>th</sup> century from courtly circles, but remained in those of the citizens or of the lower nobility until in the 17<sup>th</sup>, and even in the 18<sup>th</sup> century, for they were mentioned in 1659 and 1765.

In the inventory of Catherine de Medici (1559) were specified red, green, blue, orange, and variously colored leather hangings, also black and silver, to which belonged dividing bands adorned by mottos, monograms, and arms.

In the second half of the 17<sup>th</sup> century, the walls were also covered by brocades, damasks of different colors, velvet, taffeta, satin, etc., and for this were mentioned brocades with grounds of gold, silver, and silk, Florentine brocade, brocatello from China, Flanders, Lyons, and Venice.

Green damask was preferred by the magistrates, yellow by artists and actors, and it was retained till in the second half of the 18<sup>th</sup> century. About the middle of this century, painted linen was introduced from the East, which continued until nearly the period of the French revolution. Besides this, painted papers were common, which were made in France as beautiful as the imported oriental, and they extended back to 1675.

In the 19<sup>th</sup> century, the fine luxury of tapestry hangings on the walls disappeared and gave place generally to printed papers. "The new conditions of our social life, the uncertainty of our furnishings and of our tastes, the continual changes suffered by our dwellings and our fortunes, sufficiently explain the high favor enjoyed by it", says Havard,<sup>174</sup> and we likewise lament the uncertainty today in matters of taste.

*Note 174. Havard, J. Dictionnaire de l' Ameublement et de la Decoration depuis le XII Siecle jusqu'a nos jours. Paris. 1890.*

#### 197. Beam Ceilings.

For the ceilings of living rooms and of state apartments, there prevail two basal forms, prescribed by the diversity of





the materials; horizontal ceilings of wooden beams and vaulted ceilings of stone. The plain mediaeval type was retained for the former during the early period, where beams are laid beside each other with narrow intervals, extending from wall to wall or from girder to girder, etc., according to the size or depth of the room. Therefore the beams as frequently lie parallel to the wall containing the windows as at right angles to it. In many of the Veronese and Venetian palaces, the space between the small beams is no greater than their width. The beams are themselves covered by boards, whose joints are concealed by battens; such strips also extend parallel to the beams to form small shallow panels. The transition from the ceiling to the wall is made by richly carved wooden cornices consisting of cyma, quarter-round, dentil band and cymatium, beneath which, as stated in the preceding Article, extends a figure frieze or the plain wall panels. These wooden ceilings were still mostly painted in full colors in the mediaeval manner, the smooth surfaces of the wood being entirely a reddish-brown, frequently also decorated by brightly colored surface ornaments in blue, yellow, red, white, black, and green colors. In a room with two windows in a Florentine house 19 feet deep, the ceiling is divided into two parts by a beam 7.1 inches wide: the small beams measure 3.55 inches square and rest on the beam and the division wall with a clear span of 8.70 feet, are covered by boards and the joints are concealed by plain rectangular battens, on them being laid a coating of mortar and tiles as a floor for the room above. A kind of paneling of the ceiling spaces is then effected with the joint battens, which are 1.78 ins. wide.

This simplest treatment is then followed by the great paneled ceilings of through beams, made with beams inserted at right angles between them and richly covered with carved work, a method of treating ceilings "in whose magnificence the Renaissance knows no limits." Beautiful examples of such rich wooden ceilings with rectangular panels and rosettes on their panels, with the richest carved ornamental members and rosettes set on their intersections, are found in the repeatedly mentioned Hall de' Ducento and in other apartments of Palace Vecchio, also in Pal-



Palace Gondì, as well as in simpler and lighter form in Palace Guadagni in Florence.

With the two-fold accenting of the series of beams and of the joists crossing them, these ceilings attain a higher degree of richness, for large and small panels alternate with each other, though always structurally correct. A classic example of this kind is the brightly painted ceiling in the great hall of Palace Massimi<sup>175</sup> at Rome, made of pine wood, with white rosettes on a deep blue ground and accompanying ornaments of different colors.

*Note 175. See Letarouilly, Vol. 3.*

But the divisions of the ceiling produced by the construction were in time abandoned and freer ones were used in their place; hexagonal and octagonal were placed beside each other and extend freely over the room. Rectangular and acute-angled small panels were inserted between the polygons, which themselves again had to yield to circular forms. Geometrical figures were combined with favorite general designs.

In Book IV of his "Architecture" (Chap. 12; "De i Cieli pinai etc"), Serlio gives on 12 printed pages a great number of motives for such ceilings, from the simplest to the richest style, and he proceeds thus:-- The ancients called such panels "Lacunarii"; modern Romans term them "Palmi"; in Florence, Bologna, and the entire Romagna, people speak of them as "Tasselli", and they are called in Venice "Travamenti" and "Soffitadi." Peruzzi likewise executed in these free forms some ceilings in Palace Massimi at Rome in the most charming manner, that attained a climax of magnificence by colored gilding, (white and gold, the ground of the octagonal coffers being blue, of the square ones red, and of the long panels green). These heavy coffer ceilings were always designed for walls decorated by strong colors, the richest of which from the 12th century is preserved in the Hall de' Gigli of Palace Vecchio at Florence. Left in the natural tone of the wood, without any addition of bright color, is the wooden ceiling in the Library Laurentiana at Florence, with its partly capricious and unquiet details. The splendid ceiling in the Badia at Florence is likewise without color, which as a church ceiling is only





mentioned here on account of this fact. On the ceilings of the Early Renaissance in the apartments of princes, the decoration is richer and more fanciful, so that ornamentation predominates. Charming examples of this kind are the ceilings in the Hall de' Busti and Camera a letto in Palace Doge at Venice; gold and blue, executed in the greatest magnificence, the rosette taking the place of the coffer. A painted coffer ceiling of the good period is to be found in the upper story of School del Santo in Padua.

First in the apartments of Palace Doge at Venice occurs in place of this still architecturally effective ceiling another new conception, for great carved and gilded frames, frequently extremely Barocco in style, are found on the ceiling, striving to produce "a natural illusion", for the observer is expected to regard the pictures painted within the gilded frames as actual existences. But only the large main panels are executed thus, while the paintings in the small panels are treated as gray on gray, brown on brown, in bronze or copper colors.

The providing of such paintings of rest with ornamentation otherwise extending in splendid colors within the heavy and rich gold frames is well considered and likewise enhances the general effect of these stately ceilings, which belong to the most perfected works of their period.

Gilded sculptures in a peculiar arrangement form the massive frames, which enclose masterpieces in painting of the highest rank, creations of Paul Veronese, whose spell no man can reject, whether he be artistically gifted or not, and yet I may subscribe to Burckhardt's decision:-- "The stately paneling of the lower walls, the doorways with statues on their pediments, the pompous mantels with allegorical figures above and marble atlantes below, complete the impression of abundant power, which reigns in these halls. But as for pleasing and pure harmony, this will rather be found in the apartments of Raphael's time."

#### 198. Vaulted Ceilings.

The vaulted ceilings are mostly restricted within the forms of "cloister vaults" and those with central panels with and without lunettes, which are most common to the Renaissance.



But tunnel vaults are also justified for porticos and high apartments (Poggio a Cajano), and where cross vaults are arranged, as for loggias, for example (Palace Doria in Genoa), this only occurred with the removal of the groins in order to have a free field in the decoration of the surface. Only the transition style and the earliest period permit cross vaults to exist in the mediaeval form and also to decorate them in the mediaeval style by treating the dividing ribs and compartments separately, when the latter were ornamented by medallions and grotesques. The compartments in cloister and panel vaults were terminated below by cornices; these separate the vertical wall from the ascending vault, which forms the transition to the large panel on the ceiling. The latter was enclosed by either a geometrical, or in the Barocco period, by a capricious frame.

On the ceiling is repeated in a more thorough and spirited manner what already makes itself felt in the decoration of the walls; the combination of stucco and painting, and the ornamental art of the Renaissance here soars to the greatest undertakings. According to time and means, sometimes merely light or painted in two colors, then rising to the richest spell of color with the help of gilding.

Here was first the most severe architectural subdivision, then the freest field for painting, as for those of Pocetti in the corridors of the Uffizi at Florence, in the hall of Villa Carregi, and the like.

Genoa possesses examples of the most magnificent type in the apartments of Palace Doria and in many other palaces. The Borgia Apartments in the Vatican exhibit classical examples in the rooms. The Farnesina, the Loggias, and Villa Madama in Rome, etc., present the noblest things ever created in this domain by human genius.

The Late period was generally satisfied with a light coloring in the rooms of palaces, or with the natural color of the stucco, placing in the centre a great and brightly colored painting in oil or fresco, as Tiepolo did in a splendid way in the great hall of Palace Canossa in Verona. From the Barocco period, the ceilings in the upper story of Palace Pitti at Florence by Pietro da Cortona and Giulio Parigi (1596-1669) deserve all





praise for their stucco ornaments and pictures within the richest gold frames; these transform the apartments covered by them into stately rooms in the great style.

### 199. Floors.

Above the ceilings lie the floors, which may be constructed on massive vaults by filling the spandrels with masonry and pointing with mortar, a separate and independent support is arranged to receive the floor, or the ceiling and the floor coincide, as generally the case when constructed of wooden beams.

The covering may be most simply and cheaply of plaster or cement, or in richer buildings be executed with marble slabs, mosaics, burned bricks of ordinary or special shapes, glazed tiles, of planks in the earlier time, and again of wood in the latter, though in the form of parquetry.

Floors of Venetian "Terrazzo" (cement) in flat colored patterns are to be found in Palace del Te in Mantua, for example. Where mosaic floors are employed, the well known ornaments of the Early Christian style and of the period of the Cosmati are repeated. Where marble slabs are used, those of two or three different colors are used in a simple alternation of colors. During the Early Renaissance period, the ordinary burned red bricks were most commonly employed in private buildings and even in palaces, and these were well laid on a bed of mortar on edge or flat and in different patterns.

The most favorite way was to set the bricks in corn or herring-bone patterns, that appear everywhere, even in churches, chapels, and in monasteries (*Opus spicatum*). We find then in the Borgia Apartments of the Vatican, in Palace Ducal of Urbino, in Villa Papa Giulio at Rome, etc., where also occur division by bands into triangular and rectangular panels, in which the bricks are set parallel to the walls. But in addition to these normal forms there also occur tiles of special shapes, larger and smaller squares, together with elongated hexagonal tiles, which are laid together in the most varied patterns. (Fig. 272).

A tile floor in two colors, burned in light yellow and strong red tints, repeating the design of the ceiling, though evidently transformed into a flat one, was executed in Library Laurentiana



at Florence. It was here desired to avoid all elaboration, which might divert the attention from the architectural forms.

Greater charm of color and richness was supplied by the glazed tiles, which are now found in scarce remains on account of their small durability. Vestiges of glazing may still be recognized in the loggias of the Vatican only on the tiles close to the outer walls. In the Borgia Apartments of the time of Alexander VI, there are yet in these halls the old tiles, extended during the restorations, which we reproduce in Fig. 273.<sup>176</sup> These are also simple in design. In a small room in the Quartiere di Leone X at Florence, laid in hexagonal and octagonal tiles, then in Villa Imperiale near Pesaro and in the Library at Siena, there are still preserved many old pieces. They are found in greater numbers in many chapels in Venice, Siena, Rome, Parma,<sup>177</sup> Florence, and other places, dated from the years 1458, 1471, 1482, 1504, 1510.

*Note 176. From the (unnumbered) plate in the already mentioned work on the Borgia Apartments.*

*Note 177. "Mattoni di Majolica da un pavimento costruito nel monastero di San Paolo dei Benedetti Badessa dal 1471-82" are to be found in numbers in the Museum at Parma. These pieces from the Early Renaissance are mostly colored blue and white and bear as a design sometimes a female, sometimes a male portrait, as well as colored flowers on a white ground, and even small figures. Majolica tiles ornamented by little cupids were employed for covering a wall-arch in the former Monastery of S. Paolo. (16th century). These are also now preserved in the same museum.*

Colored tiles were also made by the Robbias in Florence for the Vatican Loggias in Rome. In Naples, and especially in all Sicily, glazed colored clay tiles form in the better dwellings to this day a favorite, beautiful, and durable covering of the floor, secure against receiving dust and vermin.

We find glazed tiles frequently employed for covering the walls in the narrow stairways of the citizens' houses, beautifully and correctly designed with oriental sketches, with splendid coloring imitating tapestry patterns, executed in imitation of the Spanish azulejos.





Already in the 14<sup>th</sup> century, floors of wooden planks were executed in France and also in Italy in addition to those of clay tiles; but they first became common in the 17<sup>th</sup> century in the form of modern parquetry and replaced floors of tiles in all elegant dwellings. <sup>178</sup> "His sisters were in the chambers with parquetry floors, where they had beads more in the fashion, and mirrors in which they could see themselves from head to foot," said Perrault in his tale of Cinderella. When one cannot have everything, one must be satisfied with parquetry and a modern name, wrote Madame de Sevigne. The "Livre Communale" (Handy Book) gave in 1692 a plate of patterns of parquetry, and in the 18<sup>th</sup> century (1782) dwellings with parquetry floors were rented. In the Accounts of the Royal buildings is mentioned wooden parquetry by a cabinet-maker for the great pavilion of the Tuileries.(1679).

*Note 178. At the time of the sway of the Renaissance in France, Italian artists and artisans were in great numbers busy in France and were employed in the highest work.(primaticcio). The original statements concerning certain arrangements and technical methods are less extended in Italy, than is the case in France. Therefore we frequently make use of French sources, assuming that their meaning must likewise apply to allied cases in Italy. Aside from the fact that sufficient examples of clay tiles are preserved in the museums of the Louvre, of Cluny, in Troyes, Grenoble, Auxerre, etc., we know that such were in use from the 18<sup>th</sup> century in France, and that "inlaid" clay tiles replaced the plain tiles in the 14<sup>th</sup> century, which still remained in use in the 15<sup>th</sup> century. The process was as follows: "Tiles are used, whose upper surface was first stamped, then filled in the recesses produced by stamping with earth of a different color, the whole then being covered by a lead glaze." These inlaid tiles disappeared and gave place to painted tiles in France toward the end of the 14<sup>th</sup> century. Dutchmen brought the process into the country.*

Philip the Bold, Duke of Burgundy, made in the year 1391 an agreement with two "makers of plain and ornamental tiles" for the delivery of such tiles. The two "makers" were a certain Jehan de Moustier of Ypres and a Jehan the Thief.



In Rouen were mentioned in 1542 faience tile floors and these tiles were laid in Hotel Soissons (1581) in Paris; Catherine de Medici also possessed them. The change occurred in Italy as in France and thus about the same time!

## 200. Fireplaces.

Serlio says in Chapter 26 of his Architecture:-- "Fireplaces are truly grand ornaments of all dwellings", and he gives 4 examples of them, the first one in the Corinthian style, a second in mixed Doric form, a third in pure Doric, and a fourth in mixed Tuscan with rustications. He shows in Book IV some fanciful compositions for fireplaces. He also states that in France the smoke flue was always carried up vertically and served for several fireplaces at the same time, wherefore it was advisable to ornament it up to the ceiling. It should also be effective in large rooms by the splendor of its appearance. It is also always considered in the same sense as being a fixed piece of magnificence in the room, from the earliest era of the Renaissance until its decadence.

In Palace Gondi in Florence, the state fireplace in an austere style stands between two simple doorways against the side wall of a hall with paneled wooden ceiling. Two richly ornamented balusters flank the opening and support a high frieze with naiads and tritons in moderately strong relief, terminated by a crowning cornice, at whose angles stand small antique detached figures, between which is suspended the great shield of arms of the Gondi with the bent arm and the mace in its hand. As a charming example may likewise be mentioned the little fireplace in Casa Vasari in Arezzo, with scroll borders and triglyph frieze, and the fireplace of Palace Borgherini as a great piece of Florentine magnificence, to be found in Museum Nationale (Bargello) at Florence, constructed in accordance with the basal idea of the Gondi fireplace, except that small Corinthian columns with richly ornamented shafts are here set instead of balusters, supporting an entire entablature, beneath which the beautiful figure frieze extends in high relief. Sphinxes crown the angles; seated cupids support the arms of the family. (Fig. 274).

Severe and beautiful fireplaces are found in the Palace at





Urbino with remaining polychromatic decoration, and where the frieze is especially notable, on which cupids with gilded hair and wings rise from an azure ground, while the ornaments are blue and gold, and the other architectural portions are left white.

*Note 179. Published in Arnold, F. Der Herzogliche Palast in Urbino. Leipzig. 1857. Pls. 42-47.*

Simpler fireplaces are to be found in Palace del Te in Mantua.

A massive, large, and darker fireplace is preserved in the great hall of Palace Doria at Genoa, its cornice being supported by white marble consoles with little figures before them, above it being a high structure with volutes and a white marble medallion in relief at its centre, flanked by two small marble figures, over the medallion being a great eagle between cornucopias, garlands of fruit and scrolled bands, a crowned angelic figure growing out of the apex, which holds a coronet, that extends to the springing of the paneled vault 16.40 ft. from the floor, but this is far excelled in magnificence by the marble fireplaces in Palace Doge at Venice. On the largest of these in the Anticollégio, a work of Tiziano Aspetti after the designs of Scamozzi, only the lower portion to the cornice is of marble, the portion above being executed in white stucco and gilding. Consoles on candelabra or bent atlantes on others support the high cornice of the mantelpiece. (Fig. 275).

#### 201. Privies, Baths, and other subordinate Rooms.

Privies were placed in houses in antiquity. They disappeared, then came in again and became necessary, where cleanliness in the cities was subjected to legal regulations.

According to the small miniature of the Decameron from the 15th century (Fig. 276), privies in the period of the Early Renaissance were placed in country houses, at least in the form of a covered and boarded shed with an open space beneath. At the time of the plague (1533), police orders were given, according to which householders having no privy in their abodes had to forthwith construct them, -- evidence that in the 16th century the house privy was not everywhere locally common.

The palaces of the Early Renaissance exhibit them of mean appearance (Palaces Strozzi and Giugni at Florence, Palace Picco-



Piccolomini in Pienza), but always properly placed against external walls with windows. They must indeed have scarcely been used by the nobles; for in Italy as in France movable commodes were used, as frequently today in southern Italy and Sicily. In the inventory of Hotel de Quatremares (1834) is mentioned one of these, and such commodes occurred in 1540 under the name of "wardrobe." They remained in use under the same name in the 17<sup>th</sup> century, and in the first third of the 18<sup>th</sup> century in France and later in Italy also, there were constructed "English closets", fixed closets with water flush and seat, which were then made large and spacious and placed in the vicinity of the bathroom.<sup>180</sup>

*Note 180. See Blondel, J. F. & M. Patte. Cours d'Architecture. Paris. 1777. Vol. V. Plate 60.*

The dancer Mademoiselle Deschamps had such a closet arranged for herself, entirely decorated by mirrors, and in renting dwellings in Paris it was always particularly emphasized (1760), that some place, -- a commode or water closet, -- existed. This "modern" arrangement, though soon 200 years old, made its way from far North <sup>181</sup> to the South, according to its name.

In the great work <sup>181</sup> in 4 volumes mentioned below is drawn an arrangement "for a water-closet or place of convenience, whose seat is in a niche", and which clearly represents the construction of the English water-closet and essentially covers the one usually considered as an invention of our own time. (Fig. 277).

*Note 181. L'Architecture Francaise etc. Vol. 3. Paris. 1727.*

Gruener gives us an illustration of the artistic treatment of a bath in a house by a colored representation under the title of "Bath of Cardinal Bibiena in the Vatican", by which we learn that the art of the Renaissance fully appears here also. Over a square room of moderate size and furnished with niches rises a cross vault, which like the walls, is adorned by brightly painted grotesques of extraordinary beauty. The semicircular niches are painted in tapestry patterns, and another covers the ornamented marble bath-tub. A room with magnificent coloring and yet how comfortable! The sketch designs for the decoration were furnished by none other than Raphael himself.

Vasari (X and XIII) further mentions the Stufa in Villa Lante





at Rome, that Giulio Romano adorned by paintings, -- the loves of the gods, -- and then the bathroom covered by a dome constructed by G. Alessi in Via Grimaldi at Bisagno near Genoa. In the work of P. P. Rubens on Genoese palaces is given a design for a house bath, which consists of a larger room, an ante-room, a vaulted octagonal warm bath and a similar vaulted cold bath. The walls of both are ornamented by niches and must indeed be assumed to be richly decorated and wainscoted with marble. (See Figs. 278, 279, where are also represented the arrangement of the kitchen of a palace with bake-oven, store-room, and dining room for servants, all placed in the basement story). The beautiful bath room with the small dome resting on columns in Palace Pitti at Florence is of more recent date.

## 202. Courts and Halls.

The rooms of dwellings are grouped around an open court after the antique model, as mentioned and shown in special cases. According as the site and the means of the builder permitted, we find the court enclosed by simple walls containing windows, or for more convenient passage in the house and in order to obtain a separate entrance for each of the connected rooms, open halls with piers or columns are extended either on only one side of the court, on two, three, or on all four of them. As examples of these may be mentioned:-- as a building without open halls, the little house occupied by Michael Angelo in Rome; with a hall on one side, the Casino of Villa Cesi; with halls on two sides, Palace de Romanis and Palace Patrizi; with halls on three sides, Palace Lante, Palace di Firenze and Palace Vicolo dell'Oro; with halls on four sides, Palace Farnese, Palace Sciarra, Palace Negrone, Palace Borghese, Palace della Cancelleria, Palace Sora, etc., all in Rome, as well as a great part of the Florentine, Genoese, and Milanese palaces. Smaller courts were made to appear larger by additions or by perspective arrangements as shown by Palace Spada in Rome (Art. 120), or one side was enclosed by niches with fountains and flowers, so that the view might extend further. Larger courts were frequently divided by intermediate porticos so as to appear more imposing. (Compare Palace Montecatini, Palace Bossi and Angelo Massimi, Palace Pamfili in Rome, and the wonderfully beautiful



and moderately large court in the Certosa near Pisa, where a draw-well is placed in the midst of the transverse portico. Also Palace dell' Collegio Helvetico at Milan should not be forgotten here.

110. The free supports of the corridors or halls are according to the antique connected by horizontal architraves and entablatures, as in the courts of S. Stefano at Venice and in that of the before mentioned Collegio Helvetico at Milan (Fig. 280), a style declared by Alberti to be the most imposing, or vaults and arches are employed, which rest on piers or columns. Then the porticos in the same court are not always of equal width; four different widths frequently alternate with each other, (Palace Giugni in Florence), where one or more porticos are intended to receive the stairs to the next story. (Compare Palace Archbishop and Palace Gondi in Florence, also Fig. 281). With narrow proportions, as for example in Palace Serristori in Florence, the staircase occupies the entire area of the court by extending around three sides of it. Horizontal architraves and arches sometimes alternate above the free supports of the portico at regular distances, as shown in Art. 167 by the so-called Palladian window, and executed in the little court of Palace Linotti in Rome and in the charming little court of the Scalzi in Florence. (Fig. 282). This alternation in larger designs is produced by domes above the free supports, for example in the court of Palace Borghese at Rome (Fig. 177), of the Brera in Milan, of the University in Genoa, and of Palace Non Finito in Florence, etc. (Fig. 283).

### 203. Free Pillars.

The earliest form of free pillars is the octagonal pier, as shown by Palace Venezia at Rome in one of its courts, as well as by the court of the Hospital Giovanni dei Genovesi there and by some Bolognese porticos. The solution of the treatment of the capitals is interesting, especially when it concerns the Corinthian order, the bell being sometimes being made octagonal like the shaft; at others it passes at top into the complete circular form, and the acanthus leaves are sometimes placed on the angles of the bell; they sometimes cover its flat front surface. (Compare Figs. 169 and 171 from the court of Palace Hotel





Hotel Brun in Bologna and Fig. 170 from Palace Fava there, where it is shown how the capitals are treated, when two half columns are attached to the sides of a square middle pier). Simple rectangular piers are found in the court of Palace de Romanis, piers with half columns placed before them in the court of Palace Venezia and of Palace Farnese, similar ones ornamented by pilasters in the court of S. M. della Pace (Figs. 284, 285) in Rome. These were succeeded by columns with plain and ornamented shafts, according to the material that antiquity must supply, so far as its stores sufficed, before new ones were produced.

#### 204. Angle Pillars.

For rectangular courts with piers and columns, the form of the angle pillar has always been an object of thorough study and reflection, since every master of importance has attempted something different. Those of the Early Renaissance, which employed octagonal piers or columns, placed like the ancient pillars at the angles, also similar to those used along the sides. Since the Doric or Corinthian order was chiefly employed and both forms of capitals could be used anywhere without change, the problem solved itself, but when the Ionic order sometimes came into use, men were naive enough to place the bolster at one side only, as is the case in the Loggia of Villa Careggi and in the oblong court of the Certosa near Florence. Bramante wished the angles in his lofty court facades in the Cancelleria at Rome to at least appear to the eye stronger, and he replaced the angle columns by angle piers. The architect of the court of S. Pietro in Vinculis at Rome hit upon the odd solution of the angle, for he placed two half columns together and thus obtained a heart-shaped section of the angle pillar. In the court of Palace Borghese at Rome the master arranged a square pier at the angle with complete columns on two sides. Less simple was the use of rectangular piers with engaged half columns, as on Palace Farnese in Rome, when Sangallo employed a projecting angle pier and engaged half columns. A peculiar solution was also attempted in the court of Collegio Romano, and Cigoli likewise chose the heart form in the court of Palace Non Finito at Florence, but made it somewhat more endurable by the projection of the pilaster. It is interesting there,



how he utilized the diminution of the column by permitting the angle of the pier to project between the capitals and broke the members of the capital around it. Palladio increased the stepping at the angles by arranging in one case three columns at the angle; at another time by the use of piers and half columns, he inserted a projecting pier at the angle, to which he assigned the same projection as to the engaged half columns.

Scamozzi likewise employed piers at the angles, but placed columns beside them only at the ends of the court and compensated for unequal intercolumniation in the court by using architraves above them. These permitted in all cases a greater freedom in movement than did the use of arches. (For examples mentioned, see Fig. 286).

#### 205. Archivolts and Spandrels of Arches.

But the kind of angle pillar again produced peculiarities in the archivolts as a result, for only with regular corner piers, such as Bramante used, was a classical solution for the architrave possible without mutilation. All courts with Tuscan columns, where angle columns come into use, show such at the junction of the archivolt mouldings. For intersections of the profiles of arches on intermediate columns, solutions like those on Palace Diocletian in Spalato and on late Roman buildings in Syria, than to forms of the best period. On Palace Rector in Ragusa was used a half mediaeval method, letting the moulding die against an inclined plane, which does not seem like master Michelozzo, but might still be adopted for convenience. Likewise the profiles of the archivolt recall in various ways those of the late Roman style,<sup>184</sup> for these were applied as scrolls of fruits and flowers or as surface ornaments in the form of interlaced scrolls. (Arches in Maddelena de' Pazzi and in others at Florence).

*Note 184. See Part II, Vol. 2, Fig. 237, of this Handbook.*

The spandrels between the archivolt and cornice were then either simply enclosed (compare Palace Archbishop in Florence), or they were beset by medallions bearing rosettes, as in the second court of S. Croce in Florence, while the little spaces thereby produced were filled by cupids and ornaments. Medallions with figures also occur instead of rosettes, as for ex-





example in the court of Hospital Maggiore at Milan. (Fig. 287).

#### 206. Architraves.

Where architraves occur in place of arches, these must be especially constructed for wider spans, and like the ancients, the Renaissance here resorted to the horizontal arch. We find this mode of construction strongly developed in the court of Palace Maffei at Verona, where the antique architrave members with triglyphs are interrupted in an original manner by a horizontal rusticated arch. (Fig. 79).

#### 207. Brick Arches.

The arches were quite otherwise shaped as soon as brick became the structural material of the arch. On the surface was then developed the entire airy world of form in flat figure and plant forms, as peculiar to the brick architecture of Upper Italy and southward to Bologna. Cupids climb upwards on vine branches, cherubs' heads with wings, and the like fill in broad bands of the fronts of arches, bordered by few decorative mouldings, that are adorned by impressed surface ornaments, or the arch of plain voussoirs may be enclosed by a decorated arch. (Certosa near Pavia, Ferrara, Faenza, Bologna).

The large spandrels of arches were also here ornamented by medallions containing figures, the small ones by painted or sculptured ornaments or again with little figures. On the wide archivolts of the great court of the Certosa near Pavia, their intersections are concealed by placing before them small figures standing on consoles (Fig. 288), and the execution is yet enriched by the use of polychromy. A peculiar decoration of each spandrel is effected, when ashlar, stucco, and glazed terra cotta alternate with each other, that the pillars, arches, and horizontal mouldings are of cut stone, the spandrels are stuccoed, and the stucco surfaces are filled with glazed terra cottas by Robbia, as done in such a splendid manner on the arched porticos of the great court of the Certosa near Florence, on the porticos of the Hospital for Foundlings there, on Hospital del Ceppo in Pistoja, and other places.

#### 208. Court Facades.

But as architectural efforts of the highest rank are to be considered the elevation and form of the stories surrounding



courts, where in the fewest cases was repeated monotonously in the upper stories, what was arranged in the ground story. Above the arches with the adjacent horizontal entablature of the ground story of Palace Archbishop in Florence, there is, for example, in the upper story an arcade with a horizontal entablature. We find the same on the well known Palace Linotte in Rome, and this idea is most imposingly expressed in the court of S. M. della Pace in Rome, where above the pilaster piers of the ground story rise piers ornamented by pilasters, between which are placed little columns (Fig. 284). A more charming and also monumentally effective motive for the architecture of a court cannot easily be found, and which moreover bears such finely adjusted and harmonious details. (Fig. 285). Likewise on more modest elevations, a portico with horizontal entablature above depressed arches of wide span is beautifully conceived as well as detailed, as in the second court of S. Croce in Florence. (Fig. 56).

The resolution of the arcades in the upper story into twice as many small arches over the wide arches of the lower story, separated by a rich and wide frieze of ornament, as on Palace Revillacqua in Bologna, is an influential architectural conception, which is there charmingly expressed (Fig. 168). The combination of frieze and balustrade between the arcades of the two stories is an interesting experiment, where the lower one is bolder and heavier, the upper one being made light and graceful.

327 elegant and yet massive is the effect of the court of the Cancelleria at Rome surrounded by four facades with the two similar porticos above each other, yet reduced in the height of the columns, with the two half stories extended high above them and animated by small windows, and which are combined by great pilasters into one story externally. The proportion between the dimensions of the area of the court and the heights of the facades enclosing it belong to the most admirable ever created.

Just as grand and even more massive is the effect of the court of Palace Farnese at Rome with the porticos on piers in the lower and middle stories, and with the walls of an upper story only animated by windows and triply divided pilasters. Both in these designs of courts surrounded by high facades and imposing in effect, as well as in the small and graceful courts full of





poetry and grace, Renaissance architecture stands alone and unsurpassed, where it gave new form to a very ancient idea, recalled by changed conditions of life. The mediaeval court of Castle Visconti in Pavia might be brought into comparison here, concerning the uniformity and richness of the forms of details.

#### 209. Ornamentation and Completion of the Courts.

Beds of flowers and plants appear to be excluded from within the courts of palaces, since only leveled and paved floors are there found with a slope toward the centre to carry off rain water. Ornamentation by statues, vases, plants in pots, and fountains occur instead of the beds mentioned (Fig. 289); court of S. Apostoli in Rome; compare also the court of Palace Doge with the bronze well-curbs by Alfonso Albergati (1559) and of Nicolo de Conti (1558), court of Palace Vecchio, of Palace Gondi in Florence, of Palace Borghese at Rome, etc.).

Metallic grilles for closing the arcoses of courts or entrances to porticos are indeed to be found; but they mostly do not belong to the good period, or they lack all artistic form. The best, that are yet preserved, are found in the churches as bronze and iron grilles for enclosing chapels. (S. M. in Organo in Verona has precious small doorway grilles 3.28 ft. high, from the 17 th century, which are worthy of consideration for the beauty of composition and gracefulness of the work. Others are found in Florence, Bologna, Rome, etc.).

The most magnificent grilles are always those on the Loggetta near the Campanile on the Piazzetta in Venice, adorned by figures and trophies of weapons and the work of Antonio Gai (Fig. 290). Another simpler grille composed of bars, points, bands, and scrolls, is found at the main entrance of the Arsenal in Venice.



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## C. PUBLIC BUILDINGS.

## Chapter 15. Large Palaces.

## 210. Palaces of Princes.

Leon Battista Alberti begins his Book V (Chap. 1) on Architecture with the title:-- "De le Fortezze e de le Habitazioni che hanno a servire per i Re e peri Signore e de le loro differentie e parti", and thus will a beginning be made here likewise with the royal palaces. Alberti meant that a monarch not only has to protect his city against external enemies, but also from unquiet elements within it, and he must therefore fortify and arrange his residence accordingly. A hereditary ruler might place this in the midst of the city and make it in the form of a palace; a new man would do better by arranging it like a fortress; yet the building should not then appear as a prison.

The Duke of Milan surrounded his castle with a rampart and a moat and enclosed it by walls and towers; the Visconti in Pavia protected theirs by four massive angle towers; the Dukes of Este separated their castle in Ferrara from the streets by wide moats; others, like the Duke of Urbino, utilized the natural and scarcely accessible location of the site for this advantage, and only in the latest period of the Renaissance were means of offense and defense disregarded in the plans of the residences of princes.

## 211. Palace Ducal in Urbino.

It was a Count of Montefeltro, who in 1213 was invested with Urbino by the emperor Frederick II, and who built himself his residence as ruler, not without resistance from the citizens of Urbino, on a high hill dominating the little city and the country, indeed at first covering but a small area and being in the irregular style of the castle of that period. Frederick of Urbino succeeded to authority in 1437, and with him began the splendor of the house, while the highly cultured prince, mentioned as a particular friend of architecture, was no longer satisfied with the home of his fathers and sought an architect, who might embody his wishes in his way, and whom he believed he found in the person of Luciano from Laurana in Dalmatia. The work retained the old building and therefore it does not appear as a harmonious whole. In order to give a greater ext-





extent to the building, an artificial site had to be created by filling and by massive substructures, to retain these masses. The unevenness of the locality and the mode of enlargement mentioned permitted the arrangement of great cellars and storerooms, the placing of kitchens, bath-rooms, etc., without difficulty beneath the ground story, whose rooms were required to have floors of uniform height in accordance with the custom at that time. The ground story received the rooms for business purposes, even the great library of the Duke, while the upper story (*piano nobile*) contained the proper living rooms for the ruler. All was grouped around a square court; a great straight stairway connected the two stories, and in addition several service stairways (partly winding), on account of the extended plan, facilitated passage in the house. The mediaeval winding stairway had to give place here to the straight stairway with landing, in accordance with the innovations of Renaissance architecture. (Fig. 292; plan).

The greatest magnificence of decoration was developed in the upper story, with that degree of comfort required in that period. Yet the exterior remained simple; it was in plain brickwork of reddish-brown bricks, solidly and well built, all rooms and passages being vaulted. A row of battlements formerly crowned the top of the building, as on Villa Careggi near Florence, on Palace Venezia in Rome, and on various Bolognese palaces. Pilasters, columns, bands and cornices are executed in travertine, and to all appearance, the surfaces of the façades were covered by travertine slabs.

Most imposing architecturally is the court with its beautiful porticoes in the ground stories and the enclosed corridors in the story above, where simple rectangular windows with caps and intermediate pilasters animate the wall surfaces. (Fig. 291, sect.). Distinguished in proportions and detailed in the most beautiful manner, the court remains a pearl of the Early Renaissance in Italy, which perhaps master Luciano himself designed and executed, or perhaps his successor Baccio Pintelli. (Vasari ascribes the building to Francesco di Giorgio da Siena).

In the interior is the surprising colossal, but simply treated, hall 112 ft. long, 48 ft. wide, and 45 ft. high. The mo-



motive in the plan is beautiful with the loggias extended thro all the stories and the windows on the right and left of them, between the two circular staircase towers, and then the single larger loggia at the side (Fig. 293, view).

313 Likewise the monumental bay window given in Fig. 257 should here be mentioned, and it should be said concerning it, that it is certainly a work unique in its kind, and it shows how the masters in the Early Renaissance could work out such a motive artistically. The beauty of the variegated blue and gold marble fireplace, enclosures of windows and doors, the rich coffered ceiling with the classically perfected ornament permit us to surmise how magnificent the interior must be, and what enjoyment and comfort the owner and artist had in a rich and delicately executed ornamentation, in carefully studied and beautiful proportions, which modern mankind must generally refuse.

#### 212. Palace in Caprarola.

A second palace on a mountain height, with the application of the new designs in fortification, is the Palace Farnese built by Jacopo Barozzi da Vignola (1547-59) on the slope of Mt. Cimino near Caprarola, located in the vicinity of Viterbo, and which Taddeo and Federico Zuccaro so splendidly ornamented internally, that they themselves say of it:-- "Che ne in Italia, ne fuora niun principe ha appartamenti piu adorni di pittura con piu grazia di questi." "They say so themselves, therefore it must be true;" but not all believe it, but find in the Vatican Loggias the purer fragrance of a modest art. The chief portions of the decoration are here the Quarters dei Prelati, richly adorned by stucco and paintings, the piano nobile, and the Scala Regia.

On a plateau of form similar to that of Tiryns rises the pentagonal palace surrounded by moats and connected with the adjacent gardens by three bridges. Flights of steps at the narrow front end of the site lead up to it. Between clumps of trees a broad road leads from the Palace and from the garden to the Casino, before and behind which are charmingly arranged ornamental gardens with fountains and cascades. The system in Roman villas of arranging the gardens and buildings about a longitudinal axis is here repeated. (Fig. 294).





Unique and beautiful remains of the circular court surrounded by columns with the six winding stairways of different sizes and the principal stairway, the Scala Regia, which served as a model for Bramante's stairway in the Belvedere of the Vatican, and which reappears in the Roman Palace Barberini and Palace Borghese. The external flights of steps do not lack a certain grandeur; but the façades have a somewhat dry effect, though with good details. The architecture of the court is treated far better than the exterior; rusticated below, with doubled piers above with engaged Ionic half columns, above these being a surrounding terrace with balustrade, the upper stories being set back. The effect of the architecture of the court thereby became magnificent.<sup>186</sup>

*Note 186. Compare Maccari, E. Il Palazzo di Caprarola. n. D. Berlin.; also percier and Fontaine, in which the beautifully simple Casino is likewise represented.*

#### 213. Palace in Carpi.

Another "princely residence in the Renaissance", the Palace of Prince Alberto Pio in Carpi, like that in Urbino, is no native creation. A square court surrounded by columnar porticos entirely enclosed by deeper rooms and only showing vaulted corridors in the ground story, forms the chief part of the plan. The two stories above the latter are subdivided by pilasters and animated by rectangular windows, altogether producing an effective architectural structure. The external upper story with its arrangement of small pilasters alternating with windows between the semicircular niches terminates<sup>187</sup> with a high entablature and crowns the street facade richly.

*Note 187. An exhaustive publication of this building, especially on the historical side, is given in Semper, H., Schulze and Barth. Dresden. 1882.*

Palace Reale in Milan was built in 1772 on the site of Palace di Gorte, the Palace of the Visconti and Sforzas. Further details concerning this building have already been given in Art. 109. Plans and historical data may be found in the Works mentioned above.<sup>187.</sup>

#### 214. Some other Palaces.

Palace Reale in Naples has likewise been previously mentioned



3/6 in Art. 115. Begun in 1600 by Domenico Fontana, it was again rebuilt in 1837-41 after the fire. The facade is 554 ft. long and is divided into three stories decorated by the three orders, Doric, Ionic, and Composite. The great state staircase was built in 1651; notable is the addition of a little later, a characteristic of the palaces of the High Barocco and Rococo periods. Palace Capo di Monte was begun in 1738 under Charles III, but was only completed in 1889, and it can therefore scarcely be considered here.

#### 215. Palaces in Turin.

Palace Madama in Turin, built by William of Montserrat in the 18 th century, is to be mentioned, which was restored in the 15 th century under Ludovico d' Acaja; it received in 1718 the magnificent double stairway from plans of Juvara and on the western side the facade with marble columns.

Palace Reale, begun in 1646, is a simple brick structure and contains the beautiful royal armoury. (Figs. 295, 296: throne room and stairway).

Palace Carignano with its remarkable brick facade was built by Guarini in 1680, but it remained unfinished until the year 1871. The oval vestibule and the double staircase extending around it are interesting.

A French work is Palace del Valentino near Turin with its steep roofs and court of honor.

*Note 188. For more on the palaces of Turin, see Gurlitt, C. Geschichte des Barockstiles in Italien. Stuttgart. 1887. p. 453 et seq.*

#### 216. Palaces in Parma, Modena, Ferrara, and Mantua.

The Farnese commenced the extensive group of buildings of Palace del Pilota in Parma, but this remained unfinished.

This princely residence was famous for its theatre, which was built by Alcottti in 1618-28, pupil of Palladio, which will be further described under Theatres.

3/8 Under Francis I, Palace Ducale in Modena was built by the Roman Avanzini in 1634, and it exhibits one of the most powerful facades of this period of the style. The arcaded court is especially effective with its two stories above each other and the crowning terrace. (Fig. 297).





It may justly be said of the Palace d'Este in Ferrara; "Their castle is unequalled in picturesque and imposing effect, yet cannot be considered a Palace", -- and just on that account is it indeed one of the most interesting palaces in all Italy. The Palace is built of red bricks as a so-called "Castle surrounded by water", to which partly draw-bridges and partly arched stone bridges lead through detached towers (bridge-heads). Massive square towers with galleries above high and plain arched cornices, like those in use in Florence and Siena, with belvedere-like additions, flank the palace itself. (Fig. 298).

Access to the interior from the street is by means of three entrances. The main entrance leads through a long 2-aisled corridor for the guard covered by tunnel vaults resting on columns, then from this over a small draw-bridge into a vaulted corridor and through the latter into the great plain court. The interior no longer contains what is promised by the exterior; it serves for the purposes of the government and contains little artistically remarkable. Except that the Sala del Consiglio contains frescoes by Dosso Dossi, as well as the adjacent Sala di Napoli, which represent wrestling contests. Better than these are the friezes with children in the succeeding Sala dell' Aurora, and this room may be termed the most beautiful one in the building. The continuous balcony on the exterior constructed of white marble slabs is so remarkable, in that its supports are composed of three stone slabs scarcely 8 inches thick, placed on each other and cut into volute ends in front, and which support the thin floor slabs divided into two pieces in depth.

The covered balcony extending across the entire width of the bridge-head is also to be mentioned, and which rests on similar narrow supports; its superstructure consists of small wooden posts, sills and purlins, whose interspaces are closed by windows. A curved roof of metal, shaped like that on Palace Roverella, covers the entire extent of the balcony.

The ducal Palace of Gonzaga, now Palace Corte Reale in Mantua, was built for Frederick II of Gonzaga in 1302, then changed and painted by Giulio Romano, and contains an abundance of interesting and splendidly decorated rooms, of which should be especially mentioned the dining hall, the Hall delle Zodiaco,



whose ceiling is painted with star forms on a dark blue ground with the addition of gilding, the Hall degli Specchi, some rooms with labyrinthine drawings on the ceilings in blue and gold, and the small cabinet for Isabella d'Este with its decorated blue and gold ceiling, which with their costly works in wood, stucco, and marble, have become permanent models for architects, painters and decorators. (Fig. 299; Hall dei Maschera).

Here belongs Palace castello di Corte, now containing archives, with its precious paintings on walls and ceilings by the great Mantegna, of whose character and firm drawing a small example is given by Fig. 300, which represents the spandrel of a vault painted gray on gray with the medallion portrait of a Roman emperor, surrounded by garlands and waving bands, adjoined by spandrels with mythological scenes, while at the top of the ceiling is arranged a so-called illusion painting, a listening maiden leaning against a balustrade with cupids. A wealth of the noblest ideas is preserved here and offered for study by artists possessing refined invention and with feeling for the truly beautiful; what is found here attains to the best that the human mind has ever created in the domain of monumental decorative art.

#### 217. Palace Doge in Venice.

Palace Doge in Venice on Rivoalto island was built by Doge Partecipazio (809) as a castle with moat, draw-bridge, and three towers connected by walls, with the residence of the Doge in the eastern wing next the narrow canal. First in 976, then again greatly injured by fire in 1105, it was enlarged and extended in 1173, 1301, 1309, and 1340, when the towers were removed and the moat was filled up. Under Doge Foscari in 1424, the Palace was again enlarged and the beautiful Porta della Carta (1439) was begun, the most charming example of the transition from Late Gothic to Renaissance.

The architects of the southern wing must have been Pietro Basseggio and Filippo Calendario; those of the western wing were Giovanni Buon and his sons Pantaleone and Bartolomeo.

The magnificent court was begun in 1485 by A. Pizzo, continued in the 16th century by P. Lombardo and Antonio Scarpagnino, yet only partially completed by them. The small facade at the





the northwest angle adjoining the Church S. Marco is ascribed to Guglielmo Bergamasco (1520), while the completed facade of the eastern wing is by Rizzo.

In the year 1577 two wings were almost destroyed by fire, when the opinions of 15 architects were asked, who agreed on a new building, with the exception of the Palace architect Antonio da Ponte, who spoke in favor of a restoration without rebuilding the walls of the first story, and he carried this out accordingly. It experienced a final suitable restoration of the facades covered by red and white marble slabs and of some pillars in the court during the years 1878-89, with considerable renewal of the decorative ornamentation.

The Giants' staircase, which extends freely into the court and is adorned by the two colossal statues of Neptune and Mars (both by Sansovino in 1483), was constructed by Antonio Rizzo from Verona as a state approach to the second story, as well as the magnificent facade and the graceful vestibule near it.

The facade with the clock was executed by Bartolomeo Monopola (1589-1609). The stairway inside it, the Scala d'Oro, with its splendid stuccoed tunnel vaults leads to the story with the great Halls for the Representatives and Councils, the Hall of the Senate, the Hall of the Grand Council, etc. (Fig. 301).<sup>189</sup>

*Note 189. Compare the Official Guide through Palace Doge in Venice by Antonio dell Rovere with the ground plan and Fig. 301.*

Thus here likewise is not a building executed at one stroke, not an entirely harmonious work, but the different parts originated gradually under special circumstances or requirements and were carried on in the changing taste of the period. Without concern whether the newly built harmonized with the old, one was added to the other as needs required, and the residence of the President and of the legislative bodies of the Republic of Venice stands there, unshaken by the storms of time during more than a thousand years, a monument of architecture, whose stones tell its history, chapter by chapter, and even if each page therein be inscribed with different letters, yet it does not bear the stamp of an erratic compilation. From small beginnings to the development of the highest power and magnificence, none of the modes of expression employed disturbs the



grand impression of the imagination or any others, since they were created by highly cultured men, though in different periods, and they may well replace the beauties of one architectural style by those of another; for only blunders in one will not interchange with the good works of another. Every period gives its best and presents it with the degree of self consciousness proper for a period of high knowledge.

This residence of the ruler of a republic with its historical recollections excels everything elsewhere created by Italy in all periods, serving for the same or similar purposes. No monarch has ever understood how to infuse into his building stones the degree of intellectual life, that the nobility of Venice knew how to give to theirs in such a high degree.

#### 218. Palace in Caserta.

Dreary and dry appears to us on the contrary the vast Palace of the Kings of the two Sicilies, built by an architect of spirit and taste, the Palace in Caserta near Capua. Master Luigi Vanvitelli designed the plan; the corner stone was laid on January 20, 1752, and the foundations were begun on June 19 of the same year.

It is the "Potsdam or Versailles of Naples", and with its fore-court, ornamental garden, sheltered walks, alleys bordered by trees and fountains, ornamental trees, grand cascades and basins with marble statues, which extend for an hour's walk toward a hill, it is a combination of the Roman villa and of the French chateau on a widely extended level country.

In elevation, but not in plan, it recalls the mediaeval castle with the four towers at the angles of the design, while the centre is emphasized by the dome, lacking in motive and not made sufficiently imposing. The central projection is adorned by the antique pediment, that came into use again after Palladio. (Fig. 302).

The residence and state apartments of the palace lie around a great rectangular court, which is again subdivided into four smaller courts by two intersecting wings, connected together by the domed structure at the intersection and by passages through the dividing wings. The angles and the centres are accented by slight projections; the living rooms are all dir-





directly connected with each other, but no longer in accordance with ancient custom are they made accessible from the outside by airy corridors, for occupying the width of the earlier passages, small anterooms or subordinate rooms precede them. Between these are inserted many small winding stairways for connecting the rooms in different stories. Even dimly lighted and scarcely ventilated corridors in accordance with the taste of the period are not disdained. In spite of all academic regularity, for these reasons, a definite clearness of the plan is therefore missed at certain points.

Nobly arranged are the front vestibules at the entrances on the principal and the garden façades, from which one may look diagonally out into the small courts. Three-aisled vaulted halls lead from them to the great vestibule to the stairway, where the four courts may be viewed from the point of intersection D (Fig. 304), and from which one passes to the state stairway constructed of the most costly kinds of marbles, and which only leads to the "Royal story". By its plan, dimensions, and the treatment of the walls with marble, the convenient staircase in three flights and with a landing belongs to the most distinguished of its kind. We have before us here perhaps the most costly stairway in the world.

Besides the principal entrances, subordinate entrances for ordinary use are arranged in the courts of the side wings, which correspond to passages through the wings in the courts. Rich perspectives are produced in the direction of the axes N N through the entire width of the building, though not as grand as those along the central axis.

The greatest weight is laid on continuous axes in the "Royal story", as shown by the dotted lines on the ground plan. All doorways lie on the same axis, so that from a point in the angle apartment, the view passes through all rooms on the entire main and side façades. A really grand idea, which may have produced a magical effect when all the rooms were used and lighted on festal occasions, and it may likewise have been effective under daylight. The view along the middle axis E D C, taken through the vestibule and the six central halls, has likewise an imposing effect. The palace chapel is removed



from the external facade and lies in a dignified way before the great vestibule to the stairway, and it is directly accessible from the state staircase.

Of special interest is the addition of a large theatre, the domestic theatre of the court, whose ceiling and 40 boxes, besides the royal box, are supported in the audience room by 12 Corinthian columns of African marble, which were taken from the Temple of Serapis at Pozzuoli. Another actual proof of enthusiasm for antiquity. Men took beautiful things just because they were good enough for their own purposes and for the new art. The great Bramante already applied the same principles as the last masters of the great art period. (See the two plans in Figs. 303 and 304 and also the work mentioned below).<sup>180</sup>

*Note 190. Vanvitelli, B. Dichiarazione dei Disegni del Reale Palazzo di Caserta. Naples. 1756.*

#### 219. Stables.

Near the private palaces as well as those of rulers, stables (scuderia) are not lacking as detached buildings, or in direct connection with the inhabited buildings. They were not executed by architects as mere utilitarian buildings, but on them likewise was impressed the stamp of spaciousness and of a certain luxury, and the greatest masters did not disdain the solution of such dry problems, as Bramante has shown in his stables of Palace Pamfili in Rome.<sup>182</sup>

*Note 192. Compare Letarouilly, p. 195 of text.*

Climatic conditions require, at least in middle and lower Italy, a more spacious development of the interior as shown by Fig. 305, where the three-aisled plan is employed with a wide and somewhat higher middle aisle and lower side aisles, lighted by high windows in the sides. The vaults here rest on reddish-gray antique granite columns with well moulded bases and capitals of the Doric order, all of good proportions.

Between every two columns are arranged three stalls.

### Chapter 16. Theatres.

#### 220. Theatre Olympico in Vicenza.

"Permanent theatres only originated late, and these were long without an external artistic form". Classical plays were indeed performed in the palaces of the great in the golden age





of the Renaissance. Thus, for example, Lorenzo, nephew of Leo X, had a play by Plautus performed about 1515, in which the scenic equipment may have played a small part.

A semicircular theatre, constructed of wood, was once provided by Palladio for carnival plays in Venice. But his first permanent theatre is the Theatre Olimpico, still existing in 327  
328 Vicenza, which moreover was preceded by two very beautiful theatres built in Venice (1580) at great cost, one oval and the other circular. The Theatre is without external form, but it exhibits in the interior the space for the audience rising like an amphitheatre, in plan a half ellipse, comparable to one-half a Roman amphitheatre, and like that ending with a portico around the uppermost row of seats. The antique theatre and also the amphitheatre were said to serve as models for this portion of the modern theatre, which enclosed the open arena or orchestra, which was succeeded by the rectangular stage of slight depth with richly treated permanent back-ground, similar to those of the Grecian-Roman theatres of Asia Minor. 193

*Note 193. See the Theatre at Aspendos in Part II, Vol. 1, Fig. 284, of this Handbook.*

If the audience room, orchestra and stage are borrowed from the ancients, still the idea of making the stage represent a view of a city is to be regarded as original, novel, and indeed an extension of what the ancients only gave in a simplified way. "Not at all a deception in our present sense, but a festal splendor of appearance."

#### 221. Theatre in Parma.

Giambattista Aleotti, the gifted pupil of Palladio, designed 34 years later a Theatre for Parma, which E. Bentivoglio executed. It denotes progress and novelty in theatre construction; the audience room is rectangular in form, in which is inserted a semicircular arched portico extending through two stories, extended straight nearly to the proscenium. The audience space is thereby of the form of an open horseshoe; the rows of seats surround a great parquet, at the end of which the stage opens, not here formed as permanent architecture, but rather like a richly enclosed triumphal arch or a monumental frame decorated by figures and columns, through which events may be



seen as played on the principal stage, enlarged by two rear stages, the ground principles for most modern theatres.

Through veneration for his master, Alcott gave the arcades of his auditorium the form of the arcade porticos of the Basilica in Vicenza; perhaps he knew not how to offer anything better.

The high porticos were formerly treated in polychromy, chiefly white and gold, as still shown by vestiges of color on the architectural parts. The wooden statues were painted white, the triglyphs in the friezes were likewise white, the metopes red, and the columns were imitative reddish marble; the equestrian statues in the vicinity of the proscenium were constructed of a wooden framework and a covering of stucco.

An engraving exhibited in the Theatre shows us the proscenium with the lowered curtain and the date of the year 1618. A "fragment of the ceiling of the Theatre Farnese painted by Linnello Spadi (18 th century)" consists of thin wood with a cupid painted thereon. In the adjoining Museum are two "Murano lustres" from the end of the 17 th century, of white glass with red and green flowers, that formerly decorated this Theatre.

The visible trussed roof, now yawning at us over the auditorium, according to these fragments did not form the ceiling of the room, nor was this even a stretched velarium, but a richly painted wooden ceiling must have been the suitable covering. The architectural structure, its colored architecture gleaming with gold in the rich illumination by candles, reflected a thousand fold by the facets of the suspended glass lustres, the interior must have had a dazzling effect, when filled by a distinguished society of ladies and gentlemen, shining in satin and silk, gold and silver.

Once the wonder of the entire aristocratic world, this Theatre has now fallen into pitiable dilapidation (Fig. 308; view of the auditorium; Fig. 309; view towards the proscenium).

This architectural work indeed deserved a better fate and on account of historical and artistic reasons was worthy of it,<sup>66</sup> but here again is the fate of the beautiful on earth! Political disturbances, the ceasing of its intended uses and the loss of interest thereby caused, as well as the lack of money, may





have given the impulse toward the ruin of the work.-- Not everything can be preserved by those born later, for the world would otherwise look strangely, and only the living are right!

## 222. Theatre of Serlio.

Serlio (1584) in the second Book of his work on Architecture (plates 47-52 of the Venetian edition) gives certain statements and drawings concerning the theatre of his period. (How the stage and theatres of our time are arranged). He first treats their longitudinal section, for he gives the steeply rising amphitheatre (audience space), then a parquette and before this a raised stage with inclined floor and a back-ground (Fig. 310). He desires to have the floor at the height of the eye, the front part being horizontal, then gently sloping to the rear wall from which the painted back-ground is suspended, and he gives numerical proportions for these.

The narrow surface of the raised stage is designated by Serlio as the "place of the scene"; the slightly raised surface F is intended for the seats of distinguished persons. The first row of steps belongs to distinguished ladies and the succeeding ones to less prominent gentlemen. Then follows a passage, as in the antique theatre; then succeed other rows for less noble persons, afterwards a second passage and other seats for men of lesser importance and lastly the floor K, intended for the paying common people. In his "Treatise of the Stage", he describes the back-ground and continues thus:--

(See original text for Italian quotation).

We see that everything is considered, which might please the eye.

Serlio distinguished between three kinds of scenery; the comic, the tragic, and the satiric. The first requires the representation of private buildings, suitable for men in small ways of business, lawyers, retailers, and like persons, but where the ruffian's house, an inn, and a temple are indispensable.

The tragic scene, on the contrary, demands palaces, royal residences and public buildings, but the satiric demands mountains, hills, rocks, some peasants' cottages, flowers and trees.

His last section treats of the artificial lights of the stage,



where he indulges in recipes, and for example, says what must be done in order to produce a sapphire-colored sky, how colors are made transparent, how beams of light may be thrown with a new and bright shaving basin, how a most beautiful and fragrant light may be produced by burning camphor, how thunder and lightning are made (by rolling a stone ball and blowing varnish powder (pulverized colophony ?) through a light, etc.). But he requires one good thing, a clear ceiling light instead of the doubtful effect of the modern footlights!

#### 223. Theatre of Buontalenti.

Buontalenti introduced in his Theatre behind the Uffizi in Florence another innovation, for he inclined the parquette floor, as Serlio did that of his stage; he likewise furnished it with an arrangement of the stage, which surprised all Europe and was much studied.

*Note 195. Gurlitt refers in his "Geschichte des Barockstiles in Italien" (Stuttgart, 1887) to a full description of the decorations of this Theatre by Baldinucci (p. 47); and further to FurttendachS, Architectura Civilis, p. 22, 23, ---. Gurlitt further speaks of this on p. 491-500.*

The arrangement of the auditorium approximates to that of the modern theatre, for around an oval parquette were arranged boxes with radial partitions between them.

#### 224. Theatre of the Bibienas.

With the appearance of the Bibienas, the construction of the theatre and its scenic equipment rose to the highest artistic perfection; they were called by the monarchs of all lands and worked in Dresden, Munich, and Bayreuth (1747); Antonio Galli Bibiena, who died in Milan (1774), was employed in Siena, Pistoja, and Bologna; Ferdinando Bibiena built the Theatre in Mantua (1735), that A. Galluzzi completed, where the internal construction was entirely executed in wood. A beautiful work on "Architecture and Perspectives" was published by Giuseppe Galli Bibiena as theatrical engineer and architect (1740), wherein he subscribes himself as *Architectus theatralis primarius* (first theatrical architect), inv. et. del.

#### 225. Theatre S. Carlo in Naples.

About this time (1737), Madrano also furnished plans for the





largest theatre in Italy, that of S. Carlo in Naples, executed by Angelo Carasale. The interior burned in 1816, but it was restored again as before.

### 226. Theatre in Palace of Caserta.

As the latest should also be mentioned the domestic Theatre of the Court in the Palace at Caserta. (Compare general plan in Fig. 304 and the detailed drawings in Figs. 311, 312). Vanvitelle there again returned to the horizontal or hall parquette, but he adopted the raised and inclined stage with traps, side wings and overhead arrangements. A proscenium with doubled Corinthian columns encloses the opening of the stage, adjacent to which are parquette boxes, above which begin the columns of "Rosso Africano" just mentioned. Between their pedestals extends a balcony and above this are two series of boxes above each other and between the shafts of the columns, just as in many of our modern theatres on this side of the Alps. The columns are connected by semicircular arches, which begin above the entablature and again conceal boxes behind themselves. From the returned entablatures extend ribs to the centre of the vaulted ceiling, which is intersected by compartments above the semicircular openings. (Fig. 311).

The amphitreatre is here dropped and gives place to boxes placed one above another, whereby all spectators are placed as nearly as possible equidistant from the stage, which produces the bad result, that the spectators in the upper galleries or boxes can only enjoy a bird's eye view of the actors and scenery and can have but a doubtful enjoyment of what is presented. (Compare section and plan in Figs. 311, 312). Has theatre architecture then made substantial progress during 150 years since the Bibienas and Vanvitelli? Scarcely, I believe! We combine the arrangements of the antique theatre with the boxes of the Renaissance theatre, -- that is ideed all, -- and even if thunder and lightning can be imitated more naturally, and better conditions of artificial lighting and a higher degree of brilliancy can be produced in the house, the footlights are yet always retained, and whatever new has been created in the plan is at the cost of good taste. Merely the machinery has become more perfect.



## 227. Other Theatres.

The masters of the 16 th century firmly adhered to the form of the auditorium of the antique theatre and amphitheatre, therefore placing on a relatively large floor area comparatively few spectators, though under the best conditions for seeing and hearing; those of the 18 th century created the innovation of boxes placed vertically above each other with the development of the solid and richly decorated ceiling of the auditorium. They brought many spectators together on a smaller floor area, made possible good seeing and hearing in the house, but lack of taste must be accepted in the bargain, that all the spectators in the higher seats could enjoy the play only in horizontal projection, which might become ridiculous under some circumstances ( for example, nymphs and daughters of the Rhine sporting in the waves!).

Likewise famous for its decoration was the Theatre in Urbino built by Genga, in which the first Italian comedy was played, the Calandra of Cardinal Bibbiena, friend of Leo X.

## Chapter 17. Universities, Museums, and Libraries.

## 228. Universities.

The oldest great universities or educational institutions must indeed have been the Museion at Alexandria (280 B. C.), the School of the Philosophers at Athens, and the High Schools in Lyons, Nimes, Constantinople, Cordova, and Syracuse. On the Italian mainland are to be found the first universities according to modern acceptation, though not furnished with all the faculties (they were chiefly limited to law and medicine), in Ravenna, Bologna, and Salerno, during the 15 th century. A similar one was founded in Naples in 1224 by Frederick II, which was in 1780 transferred and housed in the Jesuit College, built in 1680. In the 12 th century, the University of Paris first obtained a fixed corporate constitution, which was the beginning and the model for all later ones in the West.

Others were founded in Padua, Pisa, Ferrara (again established in 1402), Parma, Turin (founded in 1404), Genoa, etc., which at first already received a great accession of foreign students. These were worthily followed by the various Jesuit colleges in





Rome, Milan, Genoa, and Naples, so far as concerns greatness of arrangement; but the latter excelled everything previously created in grandeur and beauty of architecture. All developed from the abbey and cathedral schools and are products of the late middle ages or of the Early Renaissance. The buildings of the new institutions accordingly resemble the monastic buildings, where the class rooms are grouped around a quiet enclosed court, an arrangement firmly retained for reasons of suitability. Both commons halls and groups of lecture rooms were best so provided. Thus were finally the Jesuit colleges in particular, where the courts become true school courts, whose high porticos plainly indicated the purpose of the rooms lying behind them, like the low arched aisles of the cloisters, which corresponded better to the cells of monks.

The leading idea was expressed in the most beautiful manner, which was to group the class and study rooms around a great court surrounded by airy porticos according to antique principles (these were also employed by Arab architects; compare the schools of the learned in Cairo), and to lend to the building a palatial character. Knowledge must dwell in a noble manner and sun itself in brightly lighted rooms, not be "housed in a cursed damp hole", lost in smoke and mould, and surrounded by the "skeletons of animals and dead men's bones."

The architects of the Renaissance understood how to give to these courts a grand effect with well chosen beauty of details and of ornamentation. A permanent memorial must also be left there by the students, who had formerly attained to academic dignities in these higher schools, by inscribing their names and heraldic arms on the walls, among which are likewise found those of many Germans! There also frequently appear societies of men from the same country, making known the coming races, beginnings of later and still prominent corporate existence!

The court of the University of Pisa originated in the 15<sup>th</sup> century and recalls the Cloisters of Brunellesco. Of perfected beauty is the Court built by Sansovino in 1552 with two-story porticos and horizontal entablatures for the University in Padua (Fig. 313). However remarkably beautiful is also the general effect of the columnar court of this University, and



certainly may its conception be ascribed to Sansovino likewise, just as little can I make the master responsible for the detail, especially in the upper story: the ornaments there are rather too rude.

The old lecture rooms are all narrow, their seats rise steeply and extend around in semi-octagonal shape, and they are arranged in 3 or 9 steps above each other in amphitheatre form. The instructor stood next the wall containing the windows, -- before the pier between two large window openings; the black-board for sketching or figuring lay horizontally before him on the table, -- and such is still the custom there today! Galileo's room is more than plain; it still contains the honorary gifts of foreign students (also German), which were offered at the jubilee of the University. The great hall is a large and bright room with modern seats; the walls are covered by a yellowish tint and patterns, from which effectively stand out brightly painted shields of arms of the student corporations, like those on the walls and corridors of the Archiginnasio in Bologna.

The latter, with its graceful court, was built as the seat of a University by Terrabilia in 1562, but it was arranged for the communal library after the transfer of the University (1803) to Palace Cellesi (with the Court of Triachini). The beautiful Late Renaissance court of the University in Turin was built in 1713 according to the plans of the Genoese architect Ricca.

The University in Parma was built as a Jesuit college in the 16 th century by Galeazzo Alessi.

Likewise as a Jesuit college were built in the 17 th century the present University in Genoa (as previously stated) and the Brera in Milan with its incomparably beautiful and grand courts and stairways. As the earliest example of these may be taken the Collegio Romano designed by Ammanati, and as the grandest, the Sapienza at Rome with its majestic court.<sup>198</sup> The latter contains two long wings with continuous porticos, which at one end are connected by a wall with an internal corridor, on which opens in each wing stairs with landings and in two flights, while at the other ends is inserted a domed church with an exedra placed before it. These four parts of the building enclose





the simple and grand court, for which Michael Angelo once furnished plans to Pope Leo X. The building came to a stand, was again taken in hand under Gregory XIII (1575) and was only completed about 100 years later (1660) under Alexander VII, who placed in the building the inscription; "Initium Sapientiae Timor Domini." (beginning of wisdom is the fear of the Lord).

*Note 196. Both are published in Letarouilly, P. Edifices de Rome Moderne, etc. Paris. 1860.*

Men were here taught gratis law, theology, medicine, archaeology, oriental languages, and other branches of knowledge. A school of the fine arts was arranged on the halls on the ground level; in the rooms of the 4<sup>th</sup> story, a school of engineering was organized by Pius VII and Leo XII, which was opened at the accession of Pius VII (1800-1823), and it was able to celebrate its centennial at the end of the century!

The halls all have a depth of 34.5 ft. with a clear height of 19 ft. in the ground story, are of different lengths (up to 60.6 ft.), and are lighted by side windows next the street, usually two windows to 34.5 ft. of the end of the room. The corridors measure 11.5 ft. in width and are 19 ft. in height; thus the dimensions are nowhere small, each class room being spacious and airy. At the ground level are arranged the halls for perspective and anatomy with seats built in amphitheatre form, for the last of which, the oldest hall for anatomical lectures, paneled in wood, may have served as a model, (Figs. 314, 315), at least in arrangement.

#### 229. Museums.

Museums for statues, paintings, objects of the minor arts and of the art industries, were not erected in the Early period of the Renaissance as separate buildings for the exhibition of the articles mentioned.

The great men of Italy were indeed intelligent collectors, who placed especial value on inheritances from the antique; but they exhibited them in their spacious and splendid living and reception rooms. They formed intimate relations with the art works, they loved them and were not willing to lose the enjoyment of being daily surrounded by them; but they would likewise acquire fame abroad on account of these possessions, instruct



others by them, and elevate their taste.

The beginning of collections of art objects torn from their original surroundings, or whose possession appeared especially desirable, extends back into the antique period. Ptolemy Philadelphus (284-246) B.C. already established a museum for art works in addition to the library in his Palace, and this tendency was transmitted to the great men and rulers of the Italian peninsula, was retained until the period of the great political changes and was then lost; but it appeared again after the end of the middle ages, and at the beginning of the Renaissance was carried on in the highest degree. What we now find as art museums in Italy, in Milan, Venice, Verona, Bologna, Florence, Rome, Naples, Palermo, and elsewhere, are in the <sup>rarest</sup> cases buildings erected for this definite purpose.

### 230. Palace Bargello in Florence.

Palace Bargello, the present Museum for the history of the civilization and art of the middle ages and of the Renaissance, was originally built in 1255-66 as the residence of the Captain of the people and then for the supreme judge (Podesta); it afterwards became the seat of the chief of police (Bargello) and a prison (1574-1782), and only first in the period of united Italy was it arranged as a Museum. The exhibition of art objects was dependant upon the earlier purposes of the building; but it has nevertheless been skilfully made.

### 231. Palace Uffizi in Florence.

Palace Uffizi (Palace degli Uffizi), with its splendid porticos (Fig. 316), was built in 1560-74 by Vasari for the use of the government, and it now contains the famous collection of paintings in the upper story and the national library in the others, with the central archives for Tuscany and the post office. The now glazed loggias, which extend along the southern, eastern and western sides of the building and afford picturesque views of the Place Signoria and of the Arno, and the rooms adjoining them, shelter the magnificent works of art collected by the Medici and increased by the Lorraine princes. The best lighting does not always prevail therein, the rooms are not always of the best proportions, and only the so-called Tribuna decorated by Buontalenti and Pocetti must be the only





hall, built with reference to its purpose.

Moderate proportions in height, the walls covered with red damask, the domed surfaces covered with shells of mother-of-pearl, the skylights not large, -- yet the whole is typical and harmonious! -- Likewise typical and of especial beauty are the grotesque paintings on a white ground on the ceilings of the great halls by Pocetti. (1580).<sup>197</sup>

*Note 197. One of these is given in a colored reproduction in Raschdorff. Plates 47, 48.*

Thus are likewise the conditions in Venice, Verona, and Milan; works of art are piled up in old buildings for fraternities and palaces, or former Jesuit colleges, wherein the corresponding arrangement of the rooms is frequently changed.

### 232. Museum National in Naples.

The former Museo Borbonico in Naples, now Museum Nationale, has now become a great and monumental structure with its vast art treasures, although not originally intended for this purpose. It was begun in 1586 by the Viceroy as a cavalry barracks, but was transferred to the University in 1615, and then in 1790 it was arranged for the Royal collections of antiquities and paintings. The building externally recalls its primary purpose and exhibits on the middle axis of the ground plan a great 3-aisled vestibule with an adjoining semicircular stairway conceived on a grand scale, occupying the entire width of the three aisles; on the right and left of this are two open courts with vaulted corridors extending around them, which at the ends are carried through to the street facade, and adjoining them are a number of rooms of various sizes for statues; in the upper story over the vestibule is a great library hall, the rooms for the gallery of paintings, of the collection of small bronzes, of the collection of coins, whose enclosing walls generally follow the course of the walls in the ground story.

The exhibition of art objects is there actually good and remarkably beautiful, particularly in the tastefully decorated and well lighted rooms of the ground story. This monumental building indeed remains a dry and academical work; but it is not unsuitable for a museum, where a fixed permanency cannot



be counted upon.

### 233. Museums in Rome.

The conditions are otherwise in Rome, even if old monasteries and palaces are there not excluded from becoming museums. (Palace of Conservators, Museum Thermae, Museum Lateran, etc.).

Here are first the buildings of the Museum of the Vatican, which has from small beginnings developed in the course of time into separate structures built for the purpose and leading the remainder of cultured Europe.

The commencement was made by Popes Julius II, Leo X, Clement VII, and Paul III, in the Belvedere built by Bramante under Julius II. But since the good in this world never takes a straight course, the endeavors of these art-loving rulers were likewise obstructed. Pius V (1566-72) removed these collections, gave away some of their contents, and Clement XIV d. 1774 first decided again to retain and extend them. Thus arose under Clement and Pius VI the Museum Pio-Clementine, arranged by Visconti, under Pius VI the Hall of the Greek Cross, the Hall of the Rotunda, the splendid Hall of the Muses with the two square additions, all from the designs of Simonetti (Fig. 317).

The circular domed Hall of the Biga, the Hall of the Candelabra and of Animals adjoined the Court of the Belvedere; to the originally square court with cut-off angles was added the inner portico in 1775; in 1803, the halls at its angles were rebuilt as cabinets. Pius VII (1800-23) added the Museum Chiaramonti and in 1821 he had the Bracchio Nuovo built by Raphael Stern, with its 14 antique columns of cipollino, alabaster, and Egyptian granite. Gregory XVI (1831) added the Egyptian and Etruscan Museum; Pius IX and Leo XIII likewise did not remain inactive in the completion and decoration of the Vatican Museums, by which their fame was fixed.

The arrangement of skylights and high side lights is consistently carried out in these new museum buildings for the reception of statuary works, and it remains typical for all later exhibition rooms for allied purposes. The exhibition of the sculptures in the large circular Hall (Fig. 318), in the Hall of the Muses, and in the Bracchio Nuovo (Fig. 319), is a model and type, and it will likewise remain first, so long as beauti-





beautiful works of art also require to be beautifully and worthily housed!

The purpose of museums already changed during the last century. The intimacy between the owner and the work of art has disappeared; sole enjoyment of the objects collected with toil and often at great cost is no longer desired; they are desired to be for the use and benefit of the cultured and of the great multitude of mankind; all are allowed to take places at the great table, where the divine entertainment is to be bestowed. This great cosmopolitan tendency could only have arisen in that enlightened period of the Renaissance, which was to fruitfully affect even our time!

#### 234. Libraries.

Ancient Egypt already possessed great collections of books (rolls of papyrus), which extended back into the 19<sup>th</sup> century B. C. The Pisisatrides in Athens had similar ones; in the form of burned clay tablets covered by cuneiform characters were the contents of the library in the Palace of King Assurbanipal in the 7<sup>th</sup> century B.C. made permanent. Libraries for the purpose of instruction and for general use, the older with works on wooden tablets, are known to us from the period preceding Alexander. Of the Alexandrine period, there are to be mentioned the magnificent library of the Museion in Alexandria, which possessed 700,000 rolls before the great fire, and also that at Pergamon. This was built fireproof and was surrounded by porticoes, facing the east on account of the morning light; to protect the eyes, the floors were decorated by greenish marble; the stack-room was closely fitted with frames extending to the ceiling, many of these being made of costly materials (gold and ivory). One of the first public libraries on a grand scale was planned in Rome by Caesar. Augustus had 314 one built on the Palatine hill; there were 29 public libraries in Rome in the 4<sup>th</sup> century A. D. <sup>199</sup>

Note 199. Compare Pauly's *Real-Encyclopædie der Classischen Alterthumswissenschaft*. New edition by G. Wissowa. Stuttgart. 1896-1900. III. *Bibliotheken*. p. 403-424. Also: -- Clark, J. W. *The Care of Books*. Cambridge. 1901.



Most of these treasures disappeared in the period of the migrations of the nations; the problem then fell to the monasteries, to collect together the remainder, evidence of which is afforded by the libraries of the Monasteries at Mt. Cassino, Corvey, Fulda, S. Gall. (Abbot Gosbert, 816-836). After the suppression of the monasteries and after further losses during periods of war, these books came into the possession of the government or of cities.

In Italy during the period of the Early Renaissance, Pope Nicholas V (1447-1455) laced the Vatican Library into existence. A library was founded in Florence in 1444 by Cosimo the Elder, which was constantly increased by the Medici; the Library Laurenziana. In these collections less regard was paid to the worth of the contents, but much more to the external magnificence of the works, their beautiful manuscript, their decoration by miniatures, and their costly bindings.

Halls and rooms in one or more aisles appear in the older plans, in which were arranged reading desks for the folios, which were fastened by chains, and seats for the readers.

One of the earliest library buildings, the Library Malatestina in Cesena, was built by Matteo Nazio in 1452 for Domenico Malatesta, a long 3-aisled room covered by cross and tunnel vaults, the central aisle left free for passage, only the two side aisles being furnished with desks for the 4000 manuscripts. The room is divided into 11 bays and has windows on both sides, thereby being abundantly lighted. (Fig. 320).

Similar to this is the Library of S. Marco built by Michelozzo in Florence, whose plan and section are reproduced in Fig. 321.

### 346. 235. Library Laurenziana in Florence.

The Laurenziana in Florence may follow these as being a more important architectural undertaking, begun according to the designs of Michelangelo and completed by Vasari and Ammannati, with its capricious vestibule and entrance steps.

The room is likewise long here but contains a single aisle 34.1 ft. wide and 156 ft. long; it receives light on two sides through rectangular windows of stained glass, that begin 7.9 ft. above the floor with axial distances of 9.86 ft. The





walls of the hall are subdivided by pilasters and are animated by rectangular niches above the windows. The ceiling is constructed as a rich coffered ceiling of wood richly carved and left in the natural color, its design being repeated in the floor in brownish-red and yellowish tiles executed by Tribolo. The stained glass is executed in grotesques on a transparent white glass ground and therefore interrupts the daylight but slightly.

*Note 200. For good drawings of this hall and its vestibule, see Raschdorff, Plates 31-37.*

The beautifully carved seats with reading desks (Fig. 322) and their delicate ornamentation were designed by Battista Cinque and Ciapino; the drawings for the glass windows are ascribed to Giovanni da Udine. (Compare Fig. 323, where the similar composition for a glass window is reproduced from the Bargello Museum).

### 236. Vatican Library in Rome.

The Apostolic Vatican Library, as already stated, was founded by Nicholas V, but it did not receive equally careful support after the death of that Pope; it was rather neglected and was first taken up again under Sixtus IV, extended by Sixtus V, who caused the erection by Domenico Fontana of the existing buildings, which intersect the great court of Bramante. The great Hall, in which 46 low cabinets extend along the walls and around the piers, is 232 ft. long, 51 ft. wide, and 29.5 ft. high, covered by vaults, that rest upon 6 massive piers. The magnificently decorated room shows on its ceiling and walls paintings of the 17th century; Pius IX had the beautiful marble floor executed. Richly carved tables with precious marble slabs and vases adorn this most splendid of all library halls. (Fig. 324).

### 237. Cathedral Library in Siena and other Libraries.

But in beauty and in artistic contents, this room is excelled by the Cathedral Library in Siena. (Hall of Piccolomini, also called Library), built at the order of the subsequent Pope Pius III in 1495 and decorated with frescos by Pinturicchio in 1503-1507. The ceiling is formed as a coved ceiling with horizontal panel, the cove intersected by compartments, and it is very



effectively painted with grotesque ornaments in full colors. The lower part of the walls is covered by a wainscoting 9.1 ft. high, and it is furnished with tables standing 2.46 ft. before this, on which lie the missals ornamented by costly miniatures. (Fig. 325).<sup>201</sup>

*Note 201. A good view of the interior of the room is given by Plate 5 of Polychrome Meisterwerke etc., by H. Köhler. Leipzig. 1870.*

### 238. Other Libraries.

A change in the design of library fixtures was caused by the invention of printing, together with the great production of printed works, which required another mode of exhibition. Instead of laying out precious and artistically executed works, the printed books were piled in cases extending to the ceiling and along the walls, which were divided into stories by galleries. We find the books in the Library of Philip II of Spain in the Escorial (Fig. 326) placed in separate richly carved cabinets (1563-1584), the lower supports receiving folios, above which are arranged desks for books; over the latter are the bookcases adorned by Doric columns with shafts of different heights.

Thus was also the arrangement in the Library of the Dukes of Urbino, the bookcases being placed against the walls.

The Ambrosian Library in Milan, arranged in 1603-1609 by Cardinal Borromeo, likewise shows the arrangement on racks along the walls with a gallery extending around above the eight lowest shelves, to which small winding stairs lead. The hall is covered by a tunnel vault decorated by stucco and subdivided into panels.

The state and city libraries of most Italian cities are notable, which are nowhere wanting, and they all exhibit an arrangement allied to that last mentioned. The tasteless modern location in a stack-room, wherein all artistic treatment of the book-shelves is usually omitted, is scarcely found in any place.

What we today have in our store libraries is generally only a combination of the older and of the later Italian systems, where the book-shelves occur instead of desks, retaining the





middle passage and the arrangement, which we have seen in S. Marco in Florence, in Cesena, and in the Laurenzian Library. Here again have the Renaissance masters been our instructors.

The Library building in Palermo should also be mentioned on account of its grand court with its original treatment between the two superimposed arcades. (Fig. 327).

## Chapter 18. Government Buildings.

### 239. Buildings for Administration, etc.

Another member in the series of public monumental buildings is formed by the office buildings with their offices for the higher state and city administration. Neither was money spared here; these buildings are permeated by the same artistic spirit as those serving for higher uses. The power and dignity of the state must also be expressed in these works, which was again best carried out by the Republic of Venice, for at about the end of the 15th century, it had the so-called "Old Procuratio" built by Battolomeo Buono from Bergamo, and which reflects the expression of a "splendid and joyful existence." It served as an official residence for the procurators of S. Marco and contained the most diverse offices therefor, of which nothing is now to be recognized in the interior.

The Fabbriche Vecchio near the Rialto served as the city offices and warehouse, was built by Scarpagno in 1520, and Sansovino later added the rich Fabbriche Nuove adorned by pilasters.

A warehouse with offices for the German merchants, the Fondaco de' Tedeschi,<sup>202</sup> was again rebuilt after the fire in 1505 at the cost of the state by Fra Giocondo da Verona (1506) and was simply treated on its exterior, but it was decorated on the surfaces of its facade by paintings of Titian and his pupils, which have now disappeared. "If well preserved, the building would have been one of the foremost buildings in Italy."

*Note 202. See Burckhardt, J. Der Cicerone, etc. Basle. 1860.*

The most magnificent exterior is possessed by the highest administrative building of the state, the Palace of the Doge,



in its court facade by Antonio Bregno and Antonio Scarpagno.

But Palace Uffizi in Florence appears simple and earnest on the contrary, which was built by Vasari about 80 years later than the Procuratio and for the same purpose.

Between the magnificent and gay architecture of the Venetian masters and the earnest style of the Tuscans stands the Cancellaria of Bramante in Rome, where the definite purpose is expressed on the building in the noblest and most distinguished manner, particularly in the expressive columnar court. (See Art. 202 as well as the plans in the work mentioned below).<sup>203</sup>

*Note 203. Letarouilly, Vol. 1, Pls. 79-90.*

Likewise the beautiful, though no longer existing, Bank of the Medici by Filarete in Milan must again be mentioned here, the stately and dignified palace with rusticated ground story, the beautiful entrance portal (Fig. 10), the Gothic-like 12 windows in the upper story, and the cornice with consoles like the antique. (Fig. 9).

## Chapter 19. City Halls.

### 240. City Halls.

The city halls of the Renaissance, sometimes called Palace del Consiglio, Palace del Ragione, Palace Prefetizzio, or Palace Prefettura, sometimes Palace Comunale or del Commune, Municipio, etc., follow more or less the mediaeval models in their parts and in the arrangement of the rooms. Great halls, corresponding stairways, halls for assemblies and sittings, small offices, chapels, living rooms, broad corridors opening toward the street or into internal courts, which afford access to the different rooms, a regular arrangement of the windows with usually large axial distances on the facade, are the characteristics of these city palaces. Sometimes appearing simply defiant externally, they sometimes shine in costly materials, with color and gilding.

The mediaeval models in Florence and Siena, there a fortress-like form, here a brick building, are supplied with a gallery and battlements for defense, are mostly defended by a high tower (Fig. 328) 309 or 335 ft. high, -- arrangements that also appear elsewhere on like buildings of the same period. (Bologna,





Vicenza, etc.).

241. Palace Pubblico in Pienza.

These effective additions had a purpose and meaning as look-out towers and later as signal or clock towers (Siena), which was retained in the same manner in the Early Renaissance, as shown by the example in Fig. 329 from the small Palace Pubblico in Pienza, built about 1450.

The open portico on the ground level, the massively developed upper story with its round-arched windows, and the tower picturesquely placed at the side and not very high with its upper part crowned by battlements, gives a characteristic appearance to the whole, in which two tendencies contend with each other. The battlements of the tower are already omitted from government buildings and residences, whose architecture already breathes classic repose, while the tower still proudly looks down on the Place. (Fig. 329).

242. Palace Prefettizio in Pesaro.

Undeniably showing the stamp of the Early Renaissance but burdened with mediaeval accessories is Palace Prefettizio in Pesaro, whose principal parts were built by Duke Guidobaldo of Urbino, who died in 1508.

Its portico next the street still has pointed arches; the ornaments frequently have a Gothic character; but on the main facade the round-arched portico rests on rusticated piers, above which 5 colossal windows are arranged in the upper story without reference to the axes of the arcade. The window openings are flanked by Corinthian pilasters, the frieze above these is decorated by palm-leaves, and on each cap stand two cupids with garlands, shield of arms, and bands. The central window is provided with a balcony. A stone crowning cornice without consoles with a colossal egg-and-dart moulding is, like the building, effective by its size. The magnificent part of the interior is a large hall 53.2 ft. by 132 ft. in dimensions with a carved and painted coffered ceiling, octagonal panes between those of lozenge form, whose large rosettes hang from a blue ground. <sup>204</sup>

*Note 204. A sketch of the facade is to be found in Lübke's Zur Italienische Kunstgeschichte. Zeit.f. Bild. Kunst. Vol. 5. (1879) p. 355 et seq.*



243. Palace del Commune in Ancona.

As on the City Hall in Pesaro, a mixture of forms is likewise found on Palace del Commune in Pesaro, built by Francesco di Giorgio in 1470, whose court is surrounded by pointed arcades with archivolts like the antique, which rest on massive pillars, to which are attached small angle columns after the mediaeval fashion, while pilasters with palm-leaf capitals animate the surfaces of the pillars and appear as works of the Early Renaissance. (Compare the sections of the pillars in Fig. 286). As further works in this phase of the style are the two carriage portals in the court of the City Hall, formed according to the style of the Roman triumphal arch, while they exhibit slender Composite columns beside the round-arched openings, one bearing the date 1400, while the upper and richer one by Matteo da Ancona is dated 1493.

244. Palace del Podesta and Palace Communale in Bologna.

The present City Hall in Bologna, formerly Palace del Podesta, dating from the beginning of the 13<sup>th</sup> century, was partly rebuilt in 1425 after the fire by Fieravante Fieravanti and was mentioned among Bolognese palaces. (Sec Art. 112). Remarkable therein is the reappearing great hall, the so-called Hall del Re Enzo.

The Palace Communale or del Governo likewise dating from the middle ages (begun 1293) and provided in very recent times with the most varied additions, and also containing a stairway by Bramante (1509), is a massive building with galleries, halls with frescos, courts, stairways, and ornamental statuary, provided with pointed arcades next the Place, crowned by battlements, and fortified at the angle by a heavy clock tower with a Barocco termination, just as the massive mediaeval tower is added to the City Hall just mentioned.

As an important part from the Renaissance period should be mentioned the treatment of the chief entrance, which was originated by Galeazzo Alessi<sup>205</sup> and enriched by the construction of a niche by D. Tibaldi. (1581).

*Note 205. Compare Malaguzzi-Valeri, p. 210 and Fig. 73.*

The round-arched entrance gateway is flanked by coupled Doric columns on pedestals, that support a triglyph-frieze; above





this extends a balustrade, from which rise coupled Ionic columns with a great low pediment. In the middle of the colonnade thus formed in the upper story is arranged a round-arched flat niche, in which is enthroned the seated and blessing bronze statue of Pope Gregory XIII (Buoncompagni of Bologna) by Manganti. Beneath the figure appears in a very effective way the great papal arms, -- on the whole an even richer than massive portal of the developed Renaissance, but which in spite of its different forms does not influence the effect of the facades in general.

#### 245. Palace Rector in Ragusa.

In the category of City Halls already mentioned, also belongs Palace Rector in Ragusa with its very interesting portico and court with the open stairway, but which was only added in 1667. The building itself was planned in 1388; an explosion of powder destroyed it in 1435; it was affected by a similar catastrophe in 1462; Michelozzo was called upon in 1464 for advice concerning its restoration; with him came a native of Dalmatia, Giorgio Orsini, who then had to put the building in order again, for this probably merely referred to repairs. <sup>206</sup>

*Note 206. Also see Berlepsch, H.E. and F. Weysser. Bauten in und um Ragusa. Zeit.f.Bauw. 1894. p.217 et seq.*

#### 246. Palace del Consiglio in Verona.

Fra Giocondo (1435-1517) broke with mediaeval reminiscences in his Palace del Consiglio at Verona.

The work breathes gay repose and joyousness; everything of a gloomy and heavy nature is rejected from it. A deep loggia with marble columns and round arches, which rest directly on Corinthian-like capitals, forms the lower story, which is raised only 5 steps above the street, from which it is separated by a balustrade; above this rises the upper story subdivided by pilasters and with very beautiful double windows, and crowned by a main entablature like the antique, above which are placed free statues corresponding to the pilasters, but without the addition of a balustrade. Mouldings, panels of pilasters, and the capitals are gilded, the wall surfaces are subdivided into panels and are brightly painted with the noblest forms of all details. (See Fig. 48). In the full sunshine and





under the blue sky, -- a wonderful architectural monument, which smilingly throws down the glove in challenge to the preceding art period and to the surrounding buildings! The interior has been much rebuilt, yet it still contains some beautiful marble doorways.

354 247. Loggia del Consiglio in Padua.

355 On the same elevation stands the precious Loggia del Consiglio in Padua, built by Biagio Rossetti, an Early Renaissance work of the noblest type (Fig. 330), executed in white limestone. On a high base rests the portico, to which a massive flight of steps leads up. The windows of the upper story are grouped by twos and threes and leave broad and quiet wall surfaces above the windows, and a high wall with a rather stumpy main entablature.

248. Palace Communale in Brescia.

Of similarly noble appearance is Palace Communale in Brescia, begun by Formentone in 1503 and called "The Loggia". The building is detached on all sides and is divided into two unequal parts in the lower story, the larger being covered by 9 cross vaults supported by 4 columns and forming a hall of powerful effect. (Fig. 331). Peculiarly constructed Corinthian wall columns subdivide the massive piers that receive the upper story, while the adjacent arch spandrels are animated by deep medallions with inserted busts of Roman emperors. The wall surfaces of the upper story contain rectangular windows enclosed by pilasters and richly ornamented caps, which have panels with disk medallions of dark marble, while all other parts of the building are made of white marble, and separated by pilasters; an antique entablature with rich frieze terminates the whole at top, which above this is also crowned by a balustrade with vase-bearers placed before it as water-spouts. The exterior is rather pleasingly beautiful than earnest. The windows in the upper story are ascribed to Palladio and the frieze to Sansovino; the balustrade is on the contrary modern, just as the unfinished octagonal structure behind the latter is an inharmonious later addition. (Figs. 331, 333).

A fire in 1575 destroyed the great hall and the vaulted roof covered with lead, with which also disappeared valuable paintings ascribed to Titian. Vanvitelli ruined the exterior in 1769 with his additions (Fig. 331), and now in 1902 are hands





laid on the building again to destroy the wonderful work by rebuilding it, instead of piously preserving it!

laid 249. Palace Pretorio in Lucca.

As a developed and austere work of the Italian Early Renaissance (15th century) should be mentioned Palace Pretorio in Lucca by Matteo Civitale (?), which shows a portico with 4 round-arched openings on the facade resting on columns; this is succeeded by the upper story with Tuscan double windows, with open round panels at top, above which are arranged an attic story with small rectangular windows and a Corinthian cornice with consoles.

250. Palace Basilica and Palace Municipio in Vicenza.

The so-called Basilica in Vicenza and the opposite Palace del Capitano (now Municipio) should indeed be added here as magnificent communal buildings. The nucleus of the former, formerly Palace della Ragione with the adjacent red-brick tower 269 ft. high, still has pointed arches and it was only in 1549 enclosed by the wonderful portico of Palladio, executed in white marble. The plan (Fig. 336) contains on the ground level and within the four walls an internal hall covered by cross vaults, whose ceiling is supported by 12 piers. The stairs to the upper story lie free within the porticos and lead to the great hall of a single aisle, which is covered by a cylindrical roof built of timber arches (Fig. 335); this is held together by iron ties at two levels, which are omitted in Fig. 335 in order to better show the form of the roof and of the descending beams. <sup>208</sup>

*Note 208. Also in the so-called Hall of the mediaeval Palace della Ragione, -- built as a "Basilica of Law" in 1172-1219 in Padua, which has a single hall 272 x 92 ft. area and is 79 ft. high, but which was only built in 1420, -- the similar beams are composed of 3 logs in depth and are likewise tied twice, where the ties are twice suspended. The longitudinal connections are in both cases effected by the internally visible boards of the sheathing of the roof; the side thrust is directly neutralized by the iron tie-rods fastened to the pairs of beams.*

But the exterior likewise belongs to the most splendid under-



undertakings of the later Renaissance and it is at the same time the masterpiece of Palladio (Fig. 334), solidly executed in the most durable and most distinguished material used in large blocks, as shown by the voussoirs of the arches, which all extend through, as well as the architraves, for which whole slabs were employed. Not easily will a grander and more beautiful architectural monument (Fig. 337) be again found anywhere on God's green earth, than when from the side street on which the Municipio abuts, one looks across the Place towards the Basilica, which has even a mightier effect at sunset, when tower and roof appear bathed in the glow, while the light gray architecture of the Basilica is covered by a bluish shimmer and rest and silence prevail on the Place!

## Chapter 20. Hospitals and Asylums.

### 251. Hospitals.

"A sorrowful purpose, but a pleasant exterior," says Sabellicus of a Venetian hospital for the plague, and this saying is true of most hospitals in Italy.

Like churches and palaces, these buildings were also conceived in "the gayly beautiful Renaissance style," but grandeur and suitability were not neglected therein, which arouses our surprise today. Whoever indeed applies the scale to these buildings and their arrangements, that our modern physicians have created on this side of the Alps, would do them injustice; but he would also err, if he believed, that the Italians of the 20 th century are not inclined to understand the goodness of our arrangements.

These monuments of the piety and benevolence of the citizens and rulers in Italy go back to the 13 th century, to which period belong the Hospitals standing in high esteem, the Maria della Scala in Siena and that of Maria Nuova, founded in Florence in 1285. Both institutions were to be surpassed by the erection of the "Hospital Maggiore" in Milan.

### 252. Hospital Maggiore in Milan.

Filarete gives detailed information concerning the latter in his Treatise on Architecture, <sup>209</sup> when he introduces a report to his princes with the words:-- "I will specify one to you, as I





I have built one in Milan, and I will describe its arrangement to you: after the location was fixed, the extent of the building was determined at 400 × 160 braccias, which should be beautiful and for the service of sick men and women, and likewise useful to illegitimate children." He further lays especial emphasis upon the convenience and the cleansing of the privies, whose arrangement corresponded to the location of the city ditch, that flowed along the building site, and which should also be utilized to receive all wastes produced in the hospital.

*Note 209. Published by W. von Oettingen, Vienna, 1890. P. 332 et seq.*

Filarete thus described the details of his plan, his foundations and canals within the same, <sup>210</sup> next the ground story, the position of the bottom of the cellar, which he placed one braccia higher than that of the watercourse that washed out the privies, then these themselves, -- between each two beds being a little door opening into the vault, where the sick found a seat with an opening through which all sewage passed into the canal in which the water ran. The water washed out the latter and carried away everything and no bad smell could arise, since the privies first have the additional advantage, that they were always closed, were washed out and cleansed by the water, and because at every 10 braccias were placed openings for ventilation, extended upward through fixed pillars. If these privies should ever smell badly, they would then be ventilated by these flues, which extended above the roofs. They likewise received the rain water from the latter and conducted it into the sewer channels.

*Note 210. See the same work last mentioned, p. 338.*

Then comes the locating of the external and internal stairs, also the arrangement of the subordinate rooms as social rooms, dispensaries, bath-rooms, etc., and further that of the wards for the sick, of the main court between the divisions for men and women, of the mortuary, the dwelling for the clergy, the hospital chapel, the plan for the separation of men and women, the kitchens, etc. Nothing is overlooked, nothing forgotten: everything is considered. the architect does not lose himself



on the facades; he lays especial emphasis on suitability and on the technical details.

To the Treatise mentioned are added a sketch of the ground plan and a drawing of the facade, which we reproduce from Oettingen's pamphlet in Figs. 338, 339.

But only the right wing of Filarete's design was executed, and this was only done in simplified form. The corner stone laid with great ceremony on April 4<sup>th</sup>, 1457, the building was carried on by Filarete himself until 1465, at which time he was compelled to yield to the intrigues of his Milanese superintendent and colleague. "I am hated here", he wrote at that time, on the occasion of the treatment received by him. After his departure, the building was superintended by Solari and other Lombard architects. The magnificent principal court surrounded by Renaissance arched porticos was completed by Ricchini; (1624; compare the details in Fig. 287); Carlo Buzzi and Giorgio Rossoni undertook to carry on the work after Ricchini and brought it to an end in 1806.

Hence the work continued for three and a half centuries. But its external architecture, which according to the preceding lacks a unified character, the already mentioned pointed-arched double windows, which exhibit an interesting combination of Gothic and antique forms (compare Fig. 8), and the archivolts made of deep red terra cotta with their ascending vines and cupids climbing in them, always remain a reason for the fame of Filarete and of the increasing Renaissance.<sup>212</sup>

*Note 212. Ferdinand Gassina gives in the work "Le Fabbriche piu cospicue di Milano" (Milan, 1844) the plans of the existing design with the remark, that by grandeur of idea and richness of execution, it must be mentioned in the highest rank in Europe.*

212. Nine internal courts, partially enclosed by porticos on columns, have been built in time, as in the plan of Filarete, surrounded by the different buildings of the institution, which makes possible a separation of the various patients, and these are so large as to afford air and light abundantly to the different buildings. The same is likewise true of the great halls for the sick, in which the beds are placed far apart,





and where the individual patients are supplied with a volume of air as in no other hospital in the world. <sup>214</sup>

*Note 214. Compare the plan and section in the work mentioned in Note 212.*

The domed church intended by Filarete with four flanking towers like minarets for the centre of the great court, a lofty monument of the Christian religion, was omitted and forced to give place to a hospital chapel of moderate size, which partially occupies one side of the great Ricchini court.

### 253. Hospital S. Spirito in Rome.

As a foundation of the time of Innocent III may be mentioned the Hospital S. Spirito in Rome, begun in 1198, which by Sixtus IV in 1471 and by rebuilding under Innocent VIII was made the most important hospital in Rome. A great part of the buildings was erected by Baccio Pintelli, perhaps also by Pallajuoli, other portions by Antonio da Sangallo and by Fuga.

The building now contains a vast hall of a single aisle for fever patients, one adjoining this at right angles for wounded persons, rooms for surgical operations, other large and small rooms for different patients, altogether having 12 wards and 1680 beds; then an anatomical museum, a library, dispensary, instrument room, etc., and in an addition is the asylum for foundlings, and another for patients affected by contagious diseases; these rooms can receive 800 patients and 500 foundlings. (Fig. 340).

### 254. Other Hospitals.

Another design in Renaissance seems worthy of mention on account of the unusual simplicity of the building; the Hospital S. Giovanni de' Genovesi dating from the end of the 15th century, founded by the distinguished Genoese Maria Duce Cigala. Much has been changed in this hospital in the course of time, yet the court has remained unchanged.

As an especially architectural work may be designated the Hospital degli Innocenti in Florence, begun in 1419 by Brunellesco at the cost of the silk-workers and extended in 1427 by Francesco della Luna, but only completed in 1451. Its wide and airy halls are elevated above the Place by a high flight of steps, and it is built of grayish-green Mancigno



sandstone with the charming terracotta medallions of the Robbias as ornaments of the spandrels of the arches, and with the low upper story and its simple rectangular windows with angular pediments and plastered wall surfaces, it remains an unimpeachable product of the Florentine Early Renaissance. The architectural treatment of the square internal court is shown by Fig. 341, while Fig. 342 represents the entire arrangement of the ground plan.

Florence exhibits in this building one of the first foundling asylums, although the suburb of Pile at Ragusa makes the claim, that it was erected as the first foundling asylum in Europe.

A great Hospital for Incurables, called Pammatone, was built in Genoa at the cost of a learned jurist and under the direction of the architect A. Orsolino, with its court measuring 65.6 by 118 ft. and 36 ft. high. Through the portal executed in white marble, the way to the interior leads by a grandly arranged vestibule into a surprisingly beautiful court. At first only intended for women, it was enlarged by the addition of another building for men. The modes of removal of wastes from the wards for the sick and of their ventilation are interesting. (Fig. 343). The latter is effected by a peculiar system, for between the ceiling of the hall and the floor of the upper story is left a hollow space, which is furnished with exhaust flues and is lighted by small windows, in order to make possible an effective ventilation of the hollow space. Openings into it from the wards are furnished with valves regulated from below, by which the air can pass from the hall without the necessity of opening the windows.

In conclusion and to emphasize the saying of Sabellicus was the Hospital del Ceppo conceived in Pistoja, whose founding likewise extends back to the period after 1277, but which was rebuilt and adorned by the magnificent projecting structure, with the airy halls and its ever beautiful and brightly colored frieze by the Robbias (1525-35) representing the seven works of charity. Can there be a more elevating exterior, a more appropriately rich decoration for a hospital than this frieze?





## 255. Hospital for the Plague in Verona.

A hospital for persons ill of the plague, or for those suffering from other epidemic diseases, was built by Sanmicheli for the city of Verona. His plan is published in the work mentioned below.<sup>215</sup> Around a court 788 ft. long and 358 ft. wide are arranged small adjacent and separate cells 15 ft. square with a corridor 11.3 ft. wide and 16.1 ft. high before them. A small church stands in the middle of <sup>the</sup> court, which is divided by walls into four parts of irregular form, so that one-fourth of the little church may always be seen by the occupants of the cells on one part of the court. Adjoining the building containing the cells are placed the administration rooms and the official residence of the director.

*Note 215. Ronzani, F. & J. Luciolli. Les Monuments Civils, Religieux, et Militaires de Michel Sanmicheli, Architect Veronais. New Edit. by L. Dianoux. Genoa. 1878. Pls. 58-60.*

Vasari says of this building, "that it might have been much more beautiful, if among the founders had been more persons with large souls."

## 256. Almshouses.

Other buildings on benevolent foundations are those intended to receive the poor, usually extensive structures known in Italy as Asylums or lodgings for the poor people (*Albergo dei Poveri*), and which always belong to the late period of the Renaissance. They are more or less charitable and reformatory buildings: poor persons of either sex and of every age were received; orphans and foundlings learned a trade; men and women were set at work of all kinds; charity opened an asylum for the defective; justice provided rooms for the punishment of the guilty.

§ 6) Genoa possesses one of the most notable and largest designs as an asylum for the poor in its *Albergo dei Poveri*. This building was begun in 1654 from the plans of Antonio Corradi, but it was only completed by Baptista Chiro. It has external dimensions of 541 × 476 ft. and contains 4 courts and great double stairways. A church forms the central point, as likewise the case in the *Albergo dei Poveri* in Palermo, whose plan is reproduced in Fig. 344.<sup>217</sup> The structure was commenced in 1746 by



the architect Orazio Turatto, but was never completed. An atrium enclosed by columns lies before the church of the institution; two columnar courts are arranged on its right and left, adjoining which are work rooms, dormitories and refectories with their accessories.

*Note 217. From Hittorf, J.J. & L. Zanth. Architecture Moderne de la Sicile. Paris. 1835. -- The Genoese building is published in Gauthier, M. Les plus beaux Edifices de la Ville de Genes et de ses Environs. Paris. 1830.*

For the same purpose was erected in Milan in 1759 the Casa di Lavoro (Work-house) by the architect Crocec and the Reclusio or Seraglio in Naples by Fuga in 1751.

## Chapter 21. Prisons.

### 257. Prisons in Rome and Venice.

The award of imprisonment for certain offences is a measure first belonging to the modern period, first occurring in the second half of the 16th century, indeed originating in England, Holland, and North Germany. Innocent X built in Rome the prisons known under the name of Carceri Nuovi during the years 1644-55 for the solitary confinement of young vagabonds and the like, and Clement XI erected on the same site in 1704 a reformatory.

But even earlier, the Republic of Venice had constructed in the Carceri or Prigioni Criminali, from the designs of Antonio da Ponte in 1589, a prison with small and separate cells, which is still in use as a prison for ordinary criminals, and of which John Howard said in 1780 in his work on prisons, that it was the strongest which he had ever seen, and that no fever and no notable disorder appeared in it. And Tomaso Temenza writes in the biography of da Ponte, that in all Europe was there no more convenient, stronger, or better built prison. It is constructed of Istrian limestone, has small oblong windows with double iron gratings, and it accommodates 400 prisoners, exclusive of the unhealthy cells, which have neither light nor ventilation.

It is worthy of note, that the cells do not adjoin the external walls of the building, but that a narrow passage extends





there, from which the cells are entered. Communication with the external world, such as is always possible in our smaller prisons with cells, appears to be here prevented by the high location of its windows. (Fig. 345). This prison was connected with Palace Doge by the Bridge of Sighs built by Antonio Contino. (1595-1605). Its so peculiar and characteristic architecture has become typical for prison buildings until our time, though generally with the omission of the rusticated pilasters. (Fig. 346).

### 3. Chapter 22. Granaries, Exchanges, Market Houses, and Loggias.

#### 258. Granaries.

Granaries were already in use, even in antiquity. They were maintained in the middle ages and also in the period of the Renaissance in the great commercial cities. An open granary was built in 1284 on the site of the Church of S. Michele in Orac, and in place of it the present building of Or S. Michele was erected in 1386-1412, in which only the lower story serves for church purposes, while the upper rooms were used for granaries until the middle of the 16th century. This building was affected by Renaissance art, for Donatello (1413), Ghiberti (1414), Verrocchio (1489), and Giovanni da Bologna (1602), decorated it by statues.

*Note 218. See Part II, vol. 2, Figs. 298, 299, of this Handbook.*

To Galeazzo Alessi is ascribed a similar useful building in Genoa, (1625), whose ground plan and section are given in Figs. 347-349. Four storehouse structures in five vaulted stories are connected by a common vestibule and form a stately and simple whole, yet which does not lack decoration of the facade surfaces by pilasters. Nowhere is mere utility expressed!

#### 259. Exchanges.

To these warehouses are added exchanges and markets, where produce and goods were dealt in and sold at retail.

As a most beautiful example of an exchange may be mentioned that built by Alessi in Genoa, which was begun in 1570 and completed in 1596. According to the plan in Fig. 350, it is



an undivided room, that receives light through arches and windows on three sides and has a solid wall on but one side. The exterior has dignified proportions, the beautiful details peculiar to Alessi, and white monolithic marble columns; but the interior has a tasteless effect with its plain vaulted ceiling of wooden logs with plastering on reeds. The roof trusses of wooden round timbers have already been described in Art. 63. The room is without any visible ties; therefore the airy and open lower portion is no longer invariably plumb, yet this has already been the case for 300 years!

#### 260. Market Houses.

The so-called Mercato Nuovo in Florence may serve as an example of a market hall, whose plan is given in Fig. 351. Twenty sandstone columns support the ceiling composed of 12 vaults. The structure receives a firm support by 4 great angle piers and 4 intermediate piers set at the ends. The former are decorated by niches, like the piers of the Uffizi porticos; like those again, they bear modern statues of former Florentines. The Hall is the very successful work of Bernardo Tasso; the bronze wild boar is a magnificent imitation of the antique wild boar of Tacca in the Uffizi Gallery.

#### 261. Loggias.

Buildings of a peculiar kind, for which the Loggia dei Lanzi in Florence, mentioned in Art. 5 was a beginning, are the open vaulted loggias, that are usual in the 15 th century; in them assembled corporations, or certain families were accustomed to assemble on festal occasions, or to wait there.

The great model, the Loggia dei Lanzi, which in Gothic forms already shows the spirit of the coming Renaissance, was originally intended as the Loggia dei Signori as a stage for festal performances before the people, and it only later became a waiting place for the German mercenaries enlisted by the Grand Duke Cosimo I. The building was decided on in 1356 after the designs of Orcagna, but it was only erected in 1376, when Ben-ci di Cione and Simone di Francesco Talenti are mentioned as executing it. Florence possessed in 1478 more than 20 other such loggias, here family loggias.

In Siena was built after the Loggia dei Lanzi in 1417 the





Loggia on the Casino dei Nobili, the seat of the trade court, but only built with a single arch and still half Gothic in its lower parts, the Loggia dei Papa, but intended for the Piccolomini family, according to the dedicatory inscription. This appears as a vaulted arched portico on corinthian columns with coarse archivolt members, segmental transverse arches, a plain and tasteless superstructure above the arcade with a half effaced dedicatory inscription in a single line, being a work of Antonio Federighi.<sup>220</sup>

*Note 220. A drawing of the Loggia dei Papa is to be found in von Geymüller, Plate 2. -- In Müntz, E. La Renaissance en France et en Italie (Paris, 1885), p. 395, the Loggia on the Casino de' Nobili is represented as the Loggia del Papa and as built by A. Federighi, a rather strong alternation with the actual Loggia of the Pope!*

Then there may further be mentioned, even if not quite belonging here, the Loggia dal Grano built by Giulio Parigi in Florence in 1619, and the Loggia di San Paolo, recalling the works of Brunellesco, on the Place S. Maria Novella,<sup>221</sup> with its geometrical sgraffito designs and terra cotta medallions, its superstructure and the strongly projecting cornice with rafters; then in Monte S. Sevrino the Loggia del Mercato built by Antonio da Sangallo, a portico of five arches with architrave blocks over the Corinthian capitals, a main cornice with dentils, and the attic with oblong windows rounded at the sides and above the latter.<sup>222</sup>

*Note 221. See von Geymüller, Plate 21.*

*Note 222. See the same, Plate 18 a.*

Chapter 23. Government Workshops, Docks, Storehouses, Arsenals, and Inns.

262. Government Workshops, etc. Arsenals.

For the production of war material, there were already in the 12th century special workshops founded, which were all indeed buildings more or less for utility alone, which the Renaissance period did not lack. Strong and solid buildings were necessary for the preservation of materials, just as already so considered in ancient times.<sup>223.</sup>



*Note 223. See Part II, Vol. 1, 2nd edition, Figs. 97, 123, of this Handbook.*

Designs, that may give us data concerning the solution of such problems in the period of the Renaissance, which have not ceased from 1104 until the present day, and which were continually enlarged, must be those in Venice, especially from the 14th to the 19th century. The workshops and administration buildings, furnished with towers and battlemented walls, held 16,000 workmen during the best period of the Renaissance.

The walls and towers rise in dark red brickwork trimmed with white limestone; to the area enclosed by them leads the Early Renaissance portal, built of white marble and crowned by the arms of the Republic (1460), before which is arranged a small square enclosed by iron grilles and decorated by marble statues (Fig. 352). The four famous lions, which were brought from Piræus in 1687, are placed on the right and left of the portal as mighty trophies of the republic, they likewise recall the fatal destruction of the Parthenon, the greatest work of Grecian architecture.<sup>224</sup>

*Note 224. It should not be forgotten here, that the second half of the 17th century was fatal to three of the most important monuments of all ages; to the Pantheon by robbery and the addition of the so-called "ears" of Bernini (What the Barbarians did not do, that did the Barbareni!), to the Parthenon, which a bomb from an Oldenburg battery blew into the air, and to the Castle of Heidelberg, whose fortifications and roofs were destroyed by the French under Melac, the chief representatives of Grecian, of Roman, and of German-Italian art, children of the same mother!,*

### 263. Inns and Places of Amusement.

In reference to the inns and places of amusement, we can only refer to the evidence from the writers given by Burckhardt, as we are unable to add anything tangible thereto. Pope Nicholas V (1447-1455) erected at the Baths of Viterbo baths of princely equipment, great beauty and convenience. Different inns and lodging houses have received enthusiastic mention: the most beautiful and largest Inn (Osteria) before the Gate Porta San Gallo at Florence, for the festivals of artisans, was destroyed in the war of 1529.





Buildings for the purpose of public amusements were chiefly temporary structures, as at this time.

## Chapter 24. Public Fountains.

### 264. Public Fountains.

Scarcely any other country of Europe provides such an abundance of good drinking water as Italy, which civilized mankind of the ancient world already utilized for its uses, and no city of the world had such quantities of likewise good water as a luxury, as did eternal Rome. The old imperial city already pleased itself in the arrangement of water-works and monumental fountains of every kind (*Meta sudans* etc.); but the Rome of the Popes is scarcely inferior in this respect. No public place, no villa, no court, and no little garden are to be found in and around Rome without the liquid element in more or less artistic forms. And where nature did not refuse it, (for example, in Venice, where only cistern water may be had and public fountains are wanting; but instead are to be noted beautifully treated openings to cisterns), no city or village remains behind, and especially none of those costly country seats, which without the animation of the spouting water, the basins and cascades, would lack their most attractive charm.

### 265. Isolated Fountains.

Fountains are almost everywhere art works of high rank, and they are either constructed as isolated fountains with one larger collecting basin, or with several of these placed one above another, conceived as purely architectural works and accordingly ornamented, or the structure is elevated to a higher plane by the aid of figure decorations. The figures of allegoric forms of men, women, youths and children, of marine animals of frequently imaginative species and shapes (dragons, sea-horse, dolphins, and the like), consisting of tritons, nymphs, mermaids with the bodies of fishes, then either appear as merely accessory to the architecture, or these form the chief part of the work, and the architecture merely supplies the enclosing framework. Bronze, marble, granite and other kinds of stone, all the materials either separately harmonizing or combined together, of which the fountains are composed.



As perfectly beautiful examples with purely architectural treatment may be taken the two fountains 46 ft. high on the Place of S. Peter in Rome (Fig. 353) with the finely contrived arrangement of the water, one of which was designed by Maderna. The "scaly mushroom" on which the falling masses of the water first strike, guides them to the basin, which does not project much further and rests on a boldly constructed support, the water from which and that falling from the lofty jets are received by a great collecting basin, which with its strong enclosure rises above the adjoining pavement of the streets. The great Place with its mighty architecture here tolerates no solution of the problem of a fountain other than by entirely architectural means.

A smaller Place, like the Place of the Signoria in Florence, may be suited by other means; the aid of sculpture must be accepted, and the designer of the Ammanati Fountain there, named after himself, did this so thoroughly, that the participation of architecture was refused. Other conditions require different modes of expression; the Renaissance masters understood how to always satisfy themselves with success and skill by means of this principle!

The great marble basin is raised a little above the street pavement, as on the Place of S. Peter, and it forms the only important architectural portion; from its centre rises the great white marble Neptune (il biancone) on a chariot drawn by sea-horses, while there are arranged on the margin of the basin four bronze sea-deities, each with two tritons. (The School of Giovanni da Bologna, 1575). But the arrangement of the water is rather clumsy in comparison to the Roman, being chiefly, though not wholly, with a view to the preservation of the marble work.

A still more extensive part is played by the figure element in the great fountain designs in Messina and Palermo, entirely constructed of white marble, that appear on the Place near the Cathedral in the city first mentioned and in the latter on the not large Place before Palace Senator. Montorsoli was the artist of the Fountain in Messina, 26.2 ft. in height, (1547-51); two Florentines, Camilliani and Vagherino (1550)





created that in Palermo, which was originally intended for the garden of a villa. (Figs. 354, 355).

Modest in comparison with these masses of figures, but charming in effect, the so-called Tartaruge (Tortoise) Fountain in Rome (Fig. 356), rather obscured by its erection on a small Place, is a work of Taddeo Landini. (1585). Four naked youths of bronze each raise a tortoise over the margin of a basin supported by a baluster, standing on the heads of dolphins; these emit jets of water into shells placed before them.

Another great composition, though too small for the magnitude of the Place, Gregory XIII had erected from the drawings of Giacomo della Porta; it consists of two concentric basins with four water-spouting tritons, masks, and a fifth colossal triton, who rides on a spouting dolphin and holds it by the tail. Of better effect on the same Place and beside it is the more picturesquely conceived Obelisk Fountain, that Innocent X had Bernini construct in red granite. The obelisk stands on a grotto-shaped block, on whose projections sit 4 colossal figures (Ganges, Danube, Nile, and La Plata). The "Nile" covers its head, so that it may not forever look on the facade of the Church S. Agnese, built by his rival Borromini. (?). An artist's joke and an artist's revenge! But a composition in general skilful and compact.

More simply than on Place Navona has Bernini solved his problem at the Triton Fountain, where four dolphins support a shell, from which a blowing triton rises, -- an original work of the imagination, but designed in a more artistic than monumental manner. (Letarouilly, Vol. 3, Pl. 278).

The Fountain of Neptune in Bologna may be designated as one of the most effective works in this domain, a splendid effort of the Late Renaissance, in which architecture and sculpture contend for victory. (Fig. 357); the former is ascribed to Tommasi Lanerati of Palermo, the bronze Neptune 8.2 ft. high and the cupids to Giovanni da Bologna. (1564-66).

To give an estimate of all the small and great works of note would lead too far here, especially if there be included the fountains in the grounds of villas, for example in the Boboli Gardens in Florence, in Poggio a Cajano, in Petraja near Flor-



Florence, in Poggio a Cajano, in Petraja near Florence, in Villa Borghese in Rome, in Naples and in many other places, the fountains in monastery courts and gardens, as well as draw-wells, like that between the court and garden of the Church of Jesuits at Rome, in the courts of the Monastery of Monte Cassino, of S. Spirito at Rome, and in a hundred other places.

But two of the smaller designs for fountains should yet be considered: the pretty arrangements beneath the staircase in the passage to the court in Palace Vecchio (Fig. 358) at Florence and near the stairway to the Capitol in Rome, but which no longer exists in the form drawn by me in 1866 (Fig. 359). A later period condemned the two Egyptian lions to inactivity and took away from them the water vases.

#### 266. Architectural Wall-Fountains.

Instead of detached fountains, there occur great architectural ornamental works attached to the walls of houses, treated in the manner of the antique triumphal arches. The entire architectural display of these is there repeated on a great scale; it is even enriched by developing the central and side openings into niches with full length figures, as rather awkwardly shown in Aqua Felice on Place Termini, built in 1587 by Domenico Fontana under Sixtus V, and much more beautifully in the formerly praised Fountain Trevi (Fig. 360). The grand 300 ornamental structure stands on an artificially cut travertine rock, <sup>over</sup> which the waters fall in small streams into the great and low collecting basin, a view in bright moonlit summer nights, that leaves an indelible impression and an enchanting memory!

Conceived as an open loggia is the allied architectural structure of Acqua Paola, which supplies the greatest quantity of water, and which was erected in 1612 by Giovanni Fontana under Paul V. Above the opening for the stream of water nearly 92 ft. wide, that pours into the collecting basin, rises a loggia of three arches between two low end pavilions, and which is crowned by a great attic story decorated by hermes figures, and which supports a great inscription tablet with added shield of arms. The general plan is given in Fig. 361.





## Chapter 25. Monuments.

## 267. Equestrian Monuments.

The erection of public monuments in the form of pedestrian and equestrian statues, executed in hard stone or metal, was employed even to excess by antiquity and especially by the late Roman imperial period. The custom was revived in the Cinquecento, and it was the great master Donatello, who since the antique period in Italy erected the first colossal equestrian statue in cast bronze in honor of the commander of the armies of the republic of Venice, Gattamelata, in Padua (1438-1441). The bronze casting was completed in 1453 and stands on a simple stone pedestal.

The same republic of Venice had a second monument constructed a few years later to honor its general Bartolomeo Colleoni (d.1475), which Andrea Verrochio (d.1488) designed, and it was cast after his death by Alessandro Leopardi, who likewise designed the high marble pedestal (1490-95). Burckhardt designates it as the grandest equestrian statue in the world; "horse and rider are never elsewhere so conceived at one inspiration, so individualized, and yet so strongly combined," as here executed. (Fig. 362). And the judgement given in 1860 is still correct in the year 1902, at least for me, in spite of the enormous production of equestrian statues. According to the precedents in the antique period, the statue was formerly entirely gilded, vestiges of which may still be seen on the belly of the horse and on sheltered places on the armor.

38 Was its effect once more beautiful with the gleam of gold? The question may be differently answered according to the taste of the time. Whether Verrochio would have left the pedestal in the rather art-industrial treatment of Leopardi must be doubted. That it is not placed in the centre of the Place, but is moved back near the buildings surrounding it, shows superiority and good taste.

The excessively elevated position of the rider must be criticized, and Michelangelo, who had charge of the placing of the antique equestrian statue of Marcus Aurelius, found the proper height (Fig. 363) by his more highly developed artist-



artistic feeling. Both arrangements challenge comparison, in which the great Florentine must be deemed right. The two rather tame equestrian statues of Cosimo I and of Ferdinand I de Medici on Place della Signoria and Place S. Annunziata in Florence by Giovanni da Bologna, on low marble pedestals with bronze shields, are not in a comparison with the previously mentioned monuments in Padua, Venice and Rome.

#### 268. Statues; Isolated Figures.

The sketch design (now in the Museum Louvre) of Mantegna for a statue of Virgil on a low pedestal decorated by two cupids, may perhaps be the earliest proposal for an isolated figure in the Renaissance period. As a seated figure should be mentioned the Monument of Giovanni delle Bande Nere (d. 1526), sculptured in white marble, on the Place S. Lorenzo in Florence, executed by Baccio Bandinelli (Fig. 364), on a broad and richly designed marble pedestal, the architecture imitating that of Leopardi on the Colleoni monument in Venice. The representations of figures on the bases of the monuments mentioned are limited to reliefs; they express a more important addition to the interesting marble statue of the Grand Duke Ferdinand I in Leghorn, where 4 chained Moors in cast bronze are added to the pedestal as a most expressive sculpture decoration of the substructure, thus producing closer relations between it and the statue. The latter is a work of Giovanni dell' Opera, which is far excelled by the 4 Turkish slaves of Pietro Tacca. (Fig. 365).

Everywhere that preference is given to a monumental simplicity in the treatment of the pedestal over a development more like the art industries, the problem is solved in a higher artistic way, and it has turned out more permanently beautiful.

#### 269. Antique Obelisks as Ornaments of a Place.

The Roman popes busied themselves with other monumental decorations of a Place by again erecting the ancient Egyptian obelisks.

The Place S. Pietro, the Places near the Lateran and S. Maria Maggiore, have been supplied with them; on Place del Popolo and on Place Navona rise into the air these memorials of the





victories of ancient Rome over Egypt, now emblems of the conquest of heathendom by Christianity, crowned by bronze crosses! The largest of them is placed before the Lateran, came from Egyptian Thebes, and was once erected in the Circus Maximus. Made of red granite and 106 ft. high, it is indeed the greatest monolith or building stone in the world. It lay there broken in three pieces, and besides erecting it again, it had also to be joined together in one piece. Domenico Fontana, who so nappily completed the erection of an obelisk on Place S. Pietro (see Figs. 41, 42), was likewise entrusted with this purely structural problem, which he solved with similar skill and good fortune in August, 1588. The obelisk is 9.55 ft. square at base and 5.95 ft. at top, and in accordance with these dimensions the foundations were made 12.1 ft. wide and 27.8 ft. deep, entirely constructed of courses of travertine ashlar. The three pieces were in a skilful manner joined together by double dovetail dowells of the same material. The external surfaces were first accurately fitted together, then the cross-shaped grooves for the dowells were cut, and these, each in 4 pieces, were inserted and set with lead. (Fig. 367). The total height of the work from the ground to the apex amounts to 150 ft. and its weight is 540.58 tons.

#### 270. Flag Masts as Decorations of a Place.

Masts for flags may finally be mentioned as ornaments for a Place, where they have received an artistic form, as is the case on Place S. Marco in Venice. Modelled by Alessandro Leopardi (1505), the wooden masts, painted red, rise from richly decorated bronze pedestals with their waving streamers and thus form a perfected art-work. (Fig. 368).

### Chapter 26. City Gates and Bridges.

"Smilingly the gate decoys the savage into the law;  
Joyfully it passes the citizen out into free nature."  
Schiller.

#### 271. City Gates.

These words of Schiller cannot be termed exactly appropriate to mediaeval gateways; for these occur as parts of fortifications of the city in bold and lofty forms, as gloomy and fear-in



328 inspiring towers. Nowise inviting nor attractive, -- threatening destruction to whoever approaches them with hostile purpose. The external form of the gate, or better of the gateway tower, changed with the introduction of muskets and of heavier ordnance; the tower is omitted, the lofty portions disappear, and the gateway of the Renaissance appears to us as a widely extended building mass; adorned by pilasters and columns, it "smilingly invites within."

317 With this principle accords the Gate of S. Pietro in Perugia, built (1473) by Agostino d'Antonio di Duccio, which has unfortunately remained unfinished in its upper parts. (Fig. 369). With the same low proportions, the famous fortification engineer Michele Sanmicheli has treated his city and fortress gates in North Italy and Dalmatia, as shown by the plan and section of the Gate Nuova in Verona in Figs. 370 and 371, and as the beautiful Gate at Zara exhibits. (Fig. 372). Not easily could such a characteristic form and treatment of details of a structure for so stern a purpose, than is the case at the so-called Gate Stuppa in Verona and at the Gate in Zara. The capability of the gateway structure for subdivision externally is somewhat reduced, as for antique gates; yet the interior and the plan of Gate Nuova advise us differently and show that we have not to do with a mere piece of decoration.

Serlio likewise takes the same course in his designs for gates for a fortified city (Fig. 373) by assuming a rusticated order for the external side; but he does not employ it, when he adds a bastion for cannon above the main cornice.

The following examples in Rome are to be added, the Gate del Popolo (by Vignola in 1561, the internal facade built by Bernini in 1655, but enlarged in 1878), the Gate Pia (begun in 1584 after Michelangelo's capricious plans), as well as the Gate di S. Spirito commenced by Antonio da Sangallo the Younger, etc. <sup>228</sup>

*Note 228. See Letarouilly, p. 181 of text.*

387 An innovation is shown by Gate Nuova in Palermo, built under Charles V by Gasparo Quercia (1584), whose substructure is like a Roman triumphal arch; above this is an intermediate story with medallions, over which is arranged a loggia in 5





arches with a terrace, above which rises . high colored and glazed tile roof, that supports a lantern (Fig. 374). The upper part was destroyed by lightning, but it was entirely rebuilt in 1688.

### 272. Triumphal Gates and Arches.

Of gates of the most splendid style extending between existing ancient towers, there may be mentioned:-- the Triumphal Gate of Alfonso I of Arragon (Fig. 375) in the Castle Nuovo at Naples, built in 1283, erected in the year 1442 in honor of his entrance into the city, a work of the Milanese architect Pietro da Martino. Also in the same place, the Gate Capuana built some decades later by Giulio da Majano (1484); the latter being a tower with a high frieze and higher attic story, "perhaps the most beautiful of Renaissance towers;" It was restored in 1535 and adorned on the exterior by reliefs by Giovanni da Nola.

As a detached building entirely of the later period and in the sense of the antique triumphal arch, there may also be mentioned the Gate Triumfale in Florence, built in 1745 by Giadot.

### 273. Bridges.

"Bridges of absolute artistic importance were first created by the period of 1540-84.<sup>229</sup>

*Note 229. See Burekhardt, J. Geschichte der Renaissance in Italien. p. 209. Stuttgart. 1878.*

Although antique art had previously labored in this matter, executing the magnificent Bridge of Augustus in Rimini and others, solutions in the purely classic sense, such as Palladio has left to us, had scarcely appeared. His best one is given in the Design for a Bridge with three arches, with portals and shops, reproduced from his own drawings in Figs. 376, 377.<sup>230</sup> He accompanies it with the following words:-- "According to my opinion, the design for this bridge is very beautiful. It is intended for one of the most prominent cities of Italy; it must stand in the middle of the city, where the river is very wide, three passages must extend over it, which are occupied by little shops and much traffic." In justification of his design, he calls up the evidence of the ancients by saying that the Bridge Elis in Rome was covered by loggias,



furnished with a bronze balustrade and decorated by statues and other ornaments. Covered bridges were also required in the 15<sup>th</sup> century by Alberti, who at the command of Nicholas V likewise constructed a roof over the Bridge of S. Angelo at Rome.

*Note 230. In his work on Architecture, Book. III, Chapter 13, p. 25.*

In the gallery of the Palee in Parma is a painting (No. 283) by Faustino Mosetto (17<sup>th</sup> century), which gives an "ideal reconstruction of the Castle S. Angelo and of its Bridge," showing the five-arched bridge with a portico crowned at the centre by a low dome, a solution in its way beautiful and interesting, as perhaps Palladio himself may have thought. Another painting (No. 284) by Canaletto gives Palace Basilica in Vicenza and on the right of it the Bridge di Rialto, according to the design reproduced in Fig. 376, designated as "Progetto riunto."

As a bridge with shops, the Bridge Rialto in Venice (Rivolta, 1588-92) was built by Antonio da Ponte in place of an old wooden bridge, -- a spiritless work in comparison with the design of Palladio, which we may consider as made for Venice according to Canaletto's painting. It is 158 ft. long, 72.2 ft. wide, and it contains a single arch of 88.7 ft. span with 24.6 ft. rise.

The Bridge of Sighs (Sospiri) was built by Antonio Contino between 1595 and 1605, which connects the Prison with Palace Doge and is executed as a covered marble bridge with good treatment of the architectural details.

Freeing himself from the antique, Ammanati built the Bridge della Trinita over the Arno in Florence, a work of high value in engineering and in architecture. "The forms of the arches are fitted to the rise towards the middle with the most unrestricted genius," and with the most refined feeling for lines, the softer forms of the oval are chosen for the arch instead of the hard segmental arch.

## Chapter 27. Cemeteries.

### 274. Cemeteries.





Cemeteries are not specified as special public buildings, from the custom of utilizing churches, cloisters, and abbey courts as burial places. All larger designs in Italy, which we today wonder at, and which are executed as community buildings in grand style, belong to the modern period. Thus the beautiful Cemetery in Naples was first opened in 1836, that in Milan by Macciachini in 1866, another in Milan in 1895, that planned in Genoa by Refasco in 1867, and that in Rome (Campo Verano) in 1887. The Cemeteries in Messina and in Verona are likewise of modern and very recent date, but that in Palermo (Campo S. Orsola) was already built in 1782, that in Bologna in the Certosa, built in 1335, has since 1801 become a common cemetery. The Cemetery in Ferrara is arranged at the earlier Carthusian Monastery (built 1498-1553), and the Republic of Venice had built its Cemetery on the Island of Tombs, which bears the oldest Renaissance Church of Venice, S. Michele, built by Moro Lombardi (1466).

A separate Cemetery is added to the Hospital S. Spirito in Rome, whose plan is shown by Fig. 378. It directly adjoins the buildings of the Hospital and it receives only those dying therein. The graves are regularly and uniformly arranged, and the external walls are of simple architecture, decorated by paintings. The mortuary chapel belonging to it is a small structure. For this design executed by the architect Fuga, the architect has also planned the mode of burial; the bodies are thrown into pits covered by a stone each, where they are covered with unslaked lime, which consumes them.

Chapter 28. Furnishing State and Living Rooms with minor Art Works.

### 275. Decorative Equipment.

The ornamental equipment of state and living rooms, so far as it concerns the construction of floors, walls, doors and windows, has already been touched upon in Chapters 11 and 12, and additions thereto have been made in Chapter 14. Representations of the general effect of the separate state apartments have been given in the illustrations of a hall in Palace Doge (Fig. 301) and of the hall in Villa Albano near Pesaro (Fig.



184) among others, in which is shown the position of the furniture. There accordingly only remains the mention of certain articles of use and of luxury and their execution, which strictly speaking belong to the limitless and never completely surveyed domain of art industry in the time of the great Renaissance movement in Italy, and they therefore only come into consideration as such.

#### 276. Furniture.

As in architecture proper, the Renaissance announced itself in furniture, or it may generally be said to have obtained admission into all minor arts already in the 12 th century. It was not limited to the production of purely useful objects; sculpture and painting must unite in order to make art works of them.

And thus do we find it until the 15 th century with a chief example of arrangement, -- the box-seat, -- the panles painted with Biblical and historical pictures, their frames carved and gilded, a gay show-piece, placed in the room for enjoyment of the coloring. (Compare examples in Museum cell' Castello at Milan, Palace Bargello at Florence, and at other places). In the 14 th century, intarsias, i.e., inlaid work supplanted painting, at first only using geometrical black and white patterns, on account of the limited choice of kinds of woods, here and there having the help of ivory; at the beginning of the 15 th century, there were added to the geometrical ornaments freely treated plant scrolls, palm-leaf bands, and the like, with representations of architectural interiors, historical events and landscapes, in which artificially stained woods were employed. In the magnificent intarsias of S. Domenico in Bologna, recourse is had to inlays of metal in addition to colored woods, to which is added the greatest richness of wood-carving.

Skilful subdivision of surfaces and beautiful surface decoration are the leading ideas upon which depends the development of the furniture of this period, and which were only too soon abandoned, to give place to an over rich and strongly treated relief (Figs. 379, 380), which men hit upon and retained, and which reached at last its unsound climax at the





limit by the addition of columns, antique entablatures, niches, arcades, and balustrades.

The still movable cushions and pillows on mediaeval and Renaissance furniture were fixed in place in later times for reasons of convenience, producing upholstered furniture. The upholstered chair then until the 17 th century shows a simple, though rather stiff form with vertical gracefully turned legs, a back somewhat curved, and simple velvet upholstery fastened with gilt pins, with gold embroidery and tassels as a special characteristic. It was succeeded by the Barocco carved chair, and this by that entirely covered by fabrics over a simple wooden frame.

Furniture of the noble metals, entirely covered with repoussé silver, especially referring to tables and mirrors, was the fashion in Venice at the end of the 17 th century, to which is allied in France the furniture of metal and tortoiseshell, the so-called Boule furniture. A chair entirely carved in wood is represented in Fig. 381, and Fig. 382 gives a mirror frame of the same material, a Florentine work of the 16 th century. The period of Louis XV made furniture independent of the principles of architecture.

Besides the natural color of the wood, certain parts were further enriched by gilding, followed by the complete gilding of the wood-work. The wood-work was likewise covered by white, greenish, or yellowish varnish colors with the addition of gilding. For the chairs were employed the most costly silks and velvets, as well as fabrics woven in various colors and covered by drawings of figures, or by naturalistic flower scrolls.

An especially rich artistic treatment was enjoyed by the tops of tables, which assumed the most varied forms. They were made of simple and smooth woods, with intarsias, of precious kinds of marble, of ebony with ivory inlays, decorated by hard stone or delicate mosaics, with inset precious stones, and in the earlier period these tops in Florence and Venice were not supported by "legs", but by richly carved wooden blocks, succeeded later by more elegant and frequently capricious forms as supports.

Fig. 383 shows an example of a more architecturally treated



paneling of the wall with hermes-consols and niches with figures, in which the good old basal idea for the treatment of surfaces is entirely abandoned; for this must follow in furniture the change in the execution of the details.

The same result as for box-seats and chairs likewise appears for beds. The old wooden high canopied bed supported by columns gives place to that entirely covered with cloth, a very beautiful example of which, dating from the 17 th century, is still exhibited in Palace Mansi at Lucca.

A photograph of this by Alinari in Florence has become known.

### 277. Majolicas.

Of higher artistic individuality, both as objects of luxury and of use, are the majolica vessels, which were produced in great numbers and are to be found in all the museums of the known world, the glazed pottery of the 16 th century, which was chiefly made at Castel Durante in the Duchy of Urbino, where an entire school therefore arose for it. "It forms the transition from the sculptured ornamentation to the painted." The colors employed for it are those of the Robbias:-- yellow, green, blue, and violet, on a light or white ground, making the grotesque ornament more artistically valuable than figure or landscape representations. In Figs. 384 to 386 are given three such pieces from Museum Bargello in Florence, which may be styled both beautiful and characteristic.

But this industry did not stop with mugs, pots and bowls; plates, dishes, and all possible useful articles were made for the table and kitchen. A beautiful collection of these is to be found in the dispensary of the Church in Loretto and in other places.

The simply magnificent table ware of Cardinal Alexander Farnese, which the Museum Nazionale in Naples preserves, -- blue with painted gold ornaments, -- should not be forgotten here. Burckhardt's judgement of this may be recalled:-- "These majolicas are not even manufactures, but are handiwork, from the period of the most extended appreciation of form; in every dish still lives a spark of personal labor and endeavor." Herein lies the mystery, why these things have remained so lovely and valuable.





## 278. Glass.

Glass in the form of mirrors, borders, chandeliers, drinking vessels for daily use and for display, artistic dishes, cast vessels, etc., is mostly a product of the highly developed Venetian art industry (Fig. 392; Murano chandelier from Palace Vendramin in Venice, as well as Figs. 389, 391; glass objects in Museum Bargello). They may serve to recall those well known art products, that are so finely designed, and thus were correspondingly once made, sometimes of white, sometimes of colored glass, or even of both kinds combined together, and which are still fabricated with varying taste.

*279. Articles of luxury.*  
Articles of luxury, vessels and ornaments of the 16th century almost always bear the signature of Benvenuto Cellini. (1500-72). Magnificent pieces of this kind are found in the collection of silver of Palace Pitti in Florence, the best being in the cabinet of gems in the Uffizi there, and an abundance in the art museums of all the larger cities of Italy.

The motive is generally a precious mineral (agate, jasper, lapis-lazuli, etc.), transformed into a vessel in some capricious form, and which for this purpose has been furnished with a foot, handle, and cover. In the golden parts alternate polished surfaces, skilfully wrought portions, enameled parts, and those set with precious stones and pearls (Fig. 393; pitcher from Museum Imperial in Vienna, and Fig. 529; a flask of lapis-lazuli in the cabinet of gems at Florence).

Masks, nymphs, dragons, heads of animals, dolphins, and snakes, are introduced into the domain of ornament in the happiest manner, wherein with refined feeling for the combination of colors, the right one is always found.

Works entirely made of the noble metals, frequently set with enamels and precious stones, in the form of cups and beakers, wrought in silver and gilded plates (though not verified as Italian work) is again found in Florence in the places mentioned.

## 280. Works in Ivory, etc.

A special branch of this art in vessels consists of works in rock-crystal, carved pieces with polished ornaments.

The so-called "Farnese Coffin" of Joannes de Bernardi in



Naples exhibits the most splendid polished crystal parts, whose effect is somewhat injured by the overrich metal framework. (Fig. 394).

Another branch is further formed by the works in ivory, which occur sometimes as handles of table knives, sometimes as goblets and bowls, whose external surfaces are covered and executed with rich figure compositions in low and high relief.

Silver implements for eating occur in the Library of the Cathedral of Siena, whose development rests on a sounder basis than that of those of ivory. The latter went out of use early, catch dirt easily by their strong reliefs and are also inconvenient in the hand. The former exhibit smooth handles with niello ornament on their surfaces in simple lines on a dark blue ground; only the end of the handle has a knob in relief, which is gilded, like the end next the blade. (Fig. 387). Attention is here paid to the use, and every unsuitable ornamental form is avoided, an example for imitation by us, later people.

400. 281. Rugs, Handiwork, etc.

Costly rugs and articles of handiwork, statuettes, busts in marble and metal, also artistically wrought gems, family paintings and pictures in richly carved, colored and gilded frames, (Palace Pitti or Palace Uffizi in Florence), complete the decoration of apartments and by their genuineness heighten the artistic tone in those living rooms, in which those things inherited from their ancestors retained their rights, on the principle that the good from all times always harmonizes with the good, even without the much esteemed unity of style, which may become wearisome under some circumstances.





## D. ECCLESIASTICAL BUILDINGS.

## Chapter 29. General.

## 282. Survey.

For the estimation of the churches of the Renaissance, it is still more necessary than for other architectural works to review what preceding ages with their religious conceptions had created in this domain.

In the House of God culminates the architectural creations of all peoples. The highest endeavor and ability in monumental art are expressed therein. Greeks and Romans, Italians and Germans, apply themselves to the same endeavors to provide for their highest being a place, thus of an ideal kind, such as fancy can alone devise. Some give to it a home, wherein it dwells in quiet and concealment, where it receives only the visits of the chosen ones and accepts offerings and gifts; others make the abode a gathering place, where the believers together communicate with the deity, present in the spirit.

This is the characteristic difference between the temples of the pagan gods and those of the Christian Deity. The former were not intended to receive a believing multitude in a devout frame of mind for a common sacrifice and prayer; they were only the sacred dwellings of the deity, that men worshipped.

The originally impersonal Deity in time becomes personal, his perceptible image requiring a shelter affording protection like that for mortals on the earth. The Deity assumes the form of man; the same virtues and burdens are imputed to him; hate and love, magnanimity and revenge are peculiar to him. He envies, pursues, and punishes. The image of the Deity depends upon the state of the art of a people; clumsy and confused in the period of the beginnings of the formative arts, perfected and inspired in the best period. Severe and inflexible shapes enjoined by the priesthood are opposed to individual and living representations. The most common and ordinary to the most costly and richest materials were employed



in producing the image of the Deity; wood, plastic clay, the most diverse kinds of stone, bronze, silver, gold, and ivory.

The same course of progress as that of the image of the Deity was passed over by the House of the Deity. First the Hut built of wood, the woodwork covered by paneling, terra cotta, and metal plates, then the construction in stone and wood, lastly the Temple executed entirely in unchangeable materials, intended for time and eternity. A canopy, four columns and a roof above them, or four walls and a roof with a projecting portico on columns and extending on one, two, or all four sides, were indeed the oldest forms, which may likewise be recognized again in all later ones.

### 283. Greeks.

In the best period of Grecian art, the House of Deity appears on a substructure of several steps, presented to the Deity as a consecrated gift, represented as a house adorned by columns, clearly and magnificently executed in white Pentelican marble, with the most splendid ornamentation by sculptures. Its interior is either an elongated room divided into three apartments in depth, into vestibule, holy, and holiest place, in which the image of Deity stood, or merely into a front and a rear house by a transverse wall. According to the extent of space is the cell divided into two or three aisles by small colonnades, generally with one above another, which was done more for structural than for esthetic reasons, for these frequently served only for supporting the structure of the roof. The interior received light only and solely through the great doorway extending to the ceiling. According to the position of the sun and the time of year, a mysterious gloom may have prevailed within the splendidly ornamented House of Deity, which may have produced an awestruck impression in believers when presenting their offerings, which was not done in common and therefore not on fixed days.

The interior with its ornamental statues and its sacred gifts, like a museum created by reverence toward Deity, did not affect in a majestic way the masses, but rather the feelings of the individual, which priests and architect indeed already produced. But what must have more strongly impressed





the people was the peculiar placing of the temples in groups together, the creation of the separate sacred precincts! Usually placed near each other in the citadel and on a sloping plateau of rock enclosed by walls, to which stone steps led up, the entrance defended by noble gateways, -- of such a kind and in the highest perfection do we see the group of temples on the Acropolis of Athens!

Detached from the traffic of the city, only with an outlook on the mountains and the sea lie these Houses of Deity within their enclosed precinct, and so are they to be taken; the precinct must be allowed to affect us as an area. About sunset, gray Hymettos in the East is frequently colored a warm violet, Lycabettos is brownish-red, Pentelicos is deep blue and its quarry is red; Acrocorinth glows in reddish mist; the mountains of Megara vanish in gold. The sea with its islands is sometimes dark blue, sometimes green, then milky; the landscape and the leaves of the trees gleam redly above it; the marble ruins of the temples glow as with fire and become of a colossal size. The mental eye restores them with the decoration of their sculptures and thus creates a picture of the noblest kind, in which one may perceive the manifestation of the Deity.

#### 284. Romans.

Roman art takes the same course in part. The Houses of Deity receive a kindred form and arrangement; for they were also not intended to receive a multitude of believers. Of modest materials and dimensions were they built in the period of the kings and the republic (perhaps excepting the Temple of Capitoline Jupiter), a change being only made herein by imperial Rome. The most precious building materials in the world were introduced: the earlier temporary polychromy had to give place to a monumental one. Stones of varied colors were employed; granite columns with metallic ornaments occurred with white  
403 marble beams, and which is of most importance, the wooden ceiling of the cell yields place to the stone ceiling of vaulted form!

The art of vaulting attained its climax when a change in the construction of the masonry occurred.

In the Augustan period, the execution with through and regu-



regularly cut stones was abandoned, and a wall was built of spalls or small pieces, that was merely faced with ashlars or bricks. A kind of cellular construction was produced with a greater thickness of the wall, consisting of regularly shaped stones on the external faces only, between which a mixture of stone spalls and mortar was filled in courses of moderate height. On these were laid courses of bond stones, above which was repeated the same kind of masonry. Thus arose a network of solid stone, like the cells of a honeycomb, whose interspaces were filled with concrete, and this method was applied to the construction of massive stone ceilings and vaults. Economy and lightness of ceilings with entire solidity characterize this system of execution.

While for the oblong House of Deity, the tunnel vault retained exclusive sway as the form of the ceiling, there was substituted for it on polygonal and circular plans the cloister vault and the dome.

The circular form of temple, likewise derived indeed from one of the oldest forms of dwellings (Capanna of the Roman shepherds; Urns in form of houses), is only found sporadically among the Greeks, and even in Roman architecture it is not usual; yet the most important structure created by the Roman art of vaulting is here included; the world famous Pantheon in Rome with a span or internal diameter of 142.7 ft. for the vault, which seeks its equal to this day. Built on a circular substructure, with two concentric rings of concrete walls connected by ties and permitting a division of the interior into eight niches, there rises a dome with a great opening at its apex. The controlling motives on it are of the simplest; on a solid cylinder is a hemisphere open at its vertex, to whose interior leads a massive portico of eight columns.

What is it, that so powerfully enchains the observer, as soon as he enters the bronze and still antique entrance doors? What still produces the overpowering impression, even in its present mutilated condition?-- The magnitude and simplicity of the interior, and especially the unity of the lighting, that as if from a special star falls from one point into the interior and uniformly lights ceiling, wall and pavement! But





But we find another by reflection, that impresses us, which is the magnitude in comparison with other works of architecture. Like a stone world stands the interior before us, within which might be placed the most wonderful works of German, French and English architecture. With this mighty central building is contrasted in reference to the formal effect the vaulted three-aisled Basilica of Maxentius with its great cross and tunnel vaults, the former of which determine the internal effect.

The exteriors of both buildings are the simplest conceivable; no value, like that of Greek temples, is placed thereon; merely the interior must powerfully and fully affect the observer, and in this lies a transposition of the climax of the architectural problem. Men will nevermore impose by an influencing exterior or produce an impression by grouping similar structures in a precinct; only the interior will be permitted to speak, and this speech will be retained in future times, certainly under changed conditions of civilization.

#### 285. Byzantines.

With the division of the Roman empire, the transfer of the capital of Constantine the Great to Byzantium, and the introduction of Christianity as the state religion, the great problems of architecture were changed back to the East for a time. The Grecian and Roman temples had ceased, and the Christian church came in their places with other requirements.

This was the problem, to create an interior, which on certain days should receive a great multitude of believers; then the chief emphasis must be laid on the internal treatment. The late Roman antiquity afforded for this abundant suggestions and models in the central buildings mentioned and in the basilican designs with several aisles for other public buildings. And therefore there occur beside each other in Early Christian art for the House of God, the elongated basilican plan, the form of the Latin cross with unequal arms, the form of the Greek cross with equal arms, and the central plan; this art moreover understood, with the simplest treatment of the exterior and with the use of architectural details from a dead art, how to create interiors of grand effect. Not easily may man resist the peculiar charm exerted upon him by the basilicas of



Ravenna and of Rome.

Only one, -- S. Apollinare in Classe, -- in Ravenna will be considered. Whoever at an early hour in the morning fog of the rice fields wanders to the Pineta, the pine woods near Ravenna, sees the picturesquely grouped masses of brickwork suddenly appear out of the fog and enters the Church, will stand in quiet surprise; a peculiar feeling will overcome him in the abandoned House of God, even with the simplicity of the architectural idea therein expressed. A middle aisle 46 ft. wide, two side aisles half as broad, the clearstory walls supported by 24 marble columns, a semicircular apse with mosaic decorations, friezes with medallion portraits on the clearstory walls, covered by a visible trussed roof, formerly painted, -- this is all that is required. The simple dimensions of the interior, the excellent proportions, the not too abundant light poured over the interior, hold us entranced.

If the Basilica was indeed the starting point and so remained in the Western Roman empire, then was it also the central building, which always again busied the intellect. The idea was brought out by the building of S. Sophia in Constantinople, erected under Justinian within 5 years by the Greek architects Anthemius of Tralles and Isidore of Miletus in 537. We see even in the ground plan a combination of the basilica and the central structure; but the latter breaks out victoriously in the dome, which dominates the entire design! Construction is here on a great scale, what had previously only been executed in a spiritless way on a small scale, i.e., the dome is set on piers joined by arches, enclosing a square space. By means of pendentives extending between the arches, the supporting ~~up~~ring is created, on which rises the covering vault in the form of a spherical dome of 104.96 ft. diameter, which is indeed about 32.8 ft. less than that of the Pantheon at Rome, but it is therefore infinitely bolder in conception and execution. It marks a step in the history of the art of vaulting and an advance of the strongest kind.

"I have excelled thee, O Solomon!, was Justinian's greeting to the completed building. No centralized structure in the world has a more harmonious effect than this! The exterior is





plain and simple, executed with the omission of all ornamental details, indeed with reference to the fact, that this Court Church lay within the other buildings of the Palace; but on the interior were lavished the costliest materials, making an impression of size, magnificence, and sublimity! The treatment of the space is overpowering and every forward step presents new views! To this contributes the peculiar lighting by 40 small roundheaded windows in the base of the dome, which admit light into the central space, while other windows in the galleries and apses supply lighting and contrasting lights in the subordinate rooms in a picturesque manner. Even from the threshold of the entrance doorway, the eye comprises the entire interior; the dominating dome is already visible from thence. This possibility for viewing the entire interior at a glance on entering, the very happily conceived details, neither too large nor too small, and the effect of entering light makes the room appear larger than it is, a combination that essentially contributes to the mighty impression.

We visited the interior in the month of Ramadan during the great evening prayers, the rooms being animated by thousands, who repeated their prayers standing or at times prostrated themselves on the wooden floors, on which the direction towards Mecca is indicated, producing a great and hollow echo in the vaults, while the marble walls and the golden mosaics of the domes and arches reflected the gleams of thousands of small lamps, that bordered the architectural lines up to the dome or were arranged in suspended chandeliers.-- then was the effect of the interior raised to a climax, and every visitor willingly yields to it and recognizes the architectural might of the interior.

#### 286. Middle Ages.

Another advance takes us through the disorders of the migrations of the nations, which cleared away the antique, to mediaeval Romanesque and Gothic architecture. Who would miss the charm of the cathedrals and minsters of this art period or would too lightly prize it, which enlivened the sweet dreams of our childhood years with organ tones, the clang of bells, and the singing choirs, with their forest of columns and lofty



vaults, with their mysterious lighting, "where even Heaven's dear light entered, dimmed by painted panes." No man, whatever be his faith, can reject the internal effect of these buildings!

But however high the impression of the imagination may be prized, there was impossible a development of the interior, like that realized by antique Roman and Early Christian art in the halls of justice, the halls of the baths, in the Pantheon and in S. Sophia. An endeavor to attain this is indeed to be recognized, but again rather on Italian soil. Spans of 45.92 ft. or but little more were the highest attained by the mediæval art of vaulting; it did not pass this point or limit; the ancient art surpassed it about three-fold!

The endeavor for spaciousness with the reduction of domical construction made itself felt in the greater style in the Cathedrals of Florence and of Bologna, designed in the Gothic style. While in the North, men were satisfied to take the width of the middle aisle for the dome over the intersection, the Southern racial feeling for spaciousness sought an extension of this over the three aisles (middle and two side aisles), thus producing in a peculiar way with the form of the Latin cross in the plan, the effect of a centralized structure, when viewed externally towards the choir.

How in S. M. del Fiore at Florence the domical structure was conceived in the Gothic style may be learned from various representations: how the same was executed in Bologna is shown to us by the still preserved wooden model in the sacristy of S. Petronio. (Fig. 395). Neither was completed. The substructure was even provided by the Gothic architects. They created four massive piers, two of which are furnished with passages in the width of the side aisles and are connected by pointed arches in the width of the middle aisle. On this basis rose a drum of moderate height with round windows, above which is the octagonal dome as a cloister vault. The structure was carried as far as the drum by the Gothic masters; the dome thereon was the first great structural undertaking of a new and commencing period, which attained the victory with an innovation in form in the domain of architecture, which has now been employed for more than four hundred years.





## 287. Renaissance.

In the execution of this dome, the first departure from the antique art was the design of a second external dome protecting the internal and space-enclosing one; a second is to be sought in the loading of the apex by a lantern.

407 However interesting the great structure, however mightily it rises above the exterior and dominates the building, however strongly it appears in a view of the city, just as little does it satisfy in its effect of the interior by the insipidity of the architecture, by the tastelessly arranged lighting, by the yellow tinting, and by the painting of the surfaces of the domical vault, whose scale is only determined after reflection, for example, if from the highest gallery at the beginning of the dome, we allow the eye to rest on the opposite wall or fall on the floor of the mighty cathedral, where men appear like a swarm of ants, or merely measure the figures in the paintings, where the feet of some forms exhibit the remarkable dimensions of 4.92 ft. from toe to heel! A spell as on entering the Pantheon or S. Sophia does not seize on us here, and we are affected only by a comparison of the scales.

Yet 150 years later, a second undertaking of the same art period likewise surpassed the grandest creations of the antique world, of the Eastern and the Western Romans, that of S. Peter in Rome! Originally planned as a centralized building, it was executed in the form of a Latin cross with a dome over the intersection. The dome has a span of 139.4 ft., thus being larger than that in Florence and only 3.28 ft. less than that of the Pantheon, but it is also 39.4 ft. more than that of S. Sophia, resting on four massive piers, which have sides 62.3 ft. long and are connected by the great tunnel vaults. Between these are pendentives, as at S. Sophia; but they are no longer sphericaal triangles, but are spherical trapezoids, whose form and magnitude are fixed by the form of the piers, i. e., by their internal splaying, by which the projection of the pendentives is lessened. As at S. Sophia, the pendentives and the four arches combine in a basal ring, but which does not form the base of the dome, for upon this first rises further a higher cylinder (drum), admitting light. "I will place



the Pantheon upon columns," said the first master on that building, -- he knew how to do it and to then place the pier construction of the Church S. Sophia beneath it, and he did not say too much!

The great structural innovation, preceded also by experiments on a small scale in the small Byzantine churches, was the shape of the supporting piers, the addition of a cylinder admitting light, and the erection of a double dome with a lantern on a scale previously unknown to architecture. The height from the pavement to the apex of the lantern amounts to 403.44 ft., thus being more than twice that of S. Sophia. If the details of the internal architecture were on a somewhat more modest scale, no building in the world would equal it in proportions, beauty and magnificence of decoration. The light falls too abundantly within the noble and weighty interior, permitting the recognition of the finest details of the ornamentation and of the colored mosaic decorations, all happily harmonized. No mystic gloom thrills through the internal space; everywhere is the clear, warm, Southern sunshine, which illuminates and heightens the splendor of the materials, of the gilding, and of the mosaic pictures. Grandeur and solidity from the apex of the dome down to the pavement, and the feeling of elevation and beauty permeates the observer and reminds him of the vicinity of the Deity! But whoever desires to see the interior still increase in magnitude will await one of the great church festivals. The side windows are draped and admit but little light; only the dome diffuses daylight from above, but 402 not for its entire perimeter, for the windows of the light-admitting drum are veiled with transparent fabric, -- then the dimensions increase into the unexpected. If the wax candles be then lighted on the continuous cornices, illuminating the dome on the right and left of the high altar, which is itself transformed into a sea of light, the two colossal chandeliers supporting over 10,000 candles, then will he be satisfied, who wishes to recall the mystical in the House of God. On such festal days, the exterior is not neglected; it gleams with decoration by lights after darkness comes. The main lines of the building, the ribs of the dome, the cornices of the wide





colonnades gleam with the silver light of small lamps, --, the so-called "silver" illumination; on the stroke of ten, this changes into the "golden", for by a stroke of magic, large yellowish red lights are inserted between the small white lamps, and on the lantern rises the cross of Christendom, gleaming afar!

Whoever as an earnest man regards the dimensions of S. Peter's externally, will wander over the Janiculum and take his place beneath the evergreen oaks, that rise above the walls of the Villa Pamfili-Dria, and he will look around himself. Like an island lies the group of the buildings of the Vatican before him, from which rises the dome almost in a geometrical elevation, with the most beautiful outlines in the world, which Michelangelo conceived and knew how to fix in a great wooden model, before he closed his eyes. What he conceived, he was unable to behold in the completed work!

As if cast in bronze, S. Peter's stands against the blue sky, rising from the earth gleaming in violet and yellowish-brown; in the distance is the view enclosed by the mighty mountain chain of the Apennines with pointed Soracte and the snow-covered head of Mt. Leonessa, a view of the grandeur, of the earnestness, and of the beauty of a work of man, never again attained, much less ever excelled.

#### 288. Magnitude of Space.

According to the proceeding, the Renaissance artists believed themselves compelled to consider magnitude of space in church architecture, and justly so primarily, if they did not abandon the definite purpose of the building and desired to affect the minds of believers by this magnitude. And they succeeded therein like few others, although thereby the exterior fell somewhat behind in many cases.

#### 289. Ecclesiastical Style and Treatment of Forms.

Since the antique knows no ecclesiastical style, just as little has the Renaissance such a one to show. "In the South is the great and the beautiful of itself holy, and true art is noble and pious of itself; for the endeavor for perfection already arouses the soul to meditation, when it approaches God and unites with Him." (Words of Michelangelo; 1549).



As for secular buildings, the expression of form is likewise here a borrowed one, at first misunderstood, later imitated even to dryness from the antique., then degenerate, passing over the same course as in the ancient period, yet not excluding the production of new forms of details already mentioned.

Pointed, segmental, semicircular, and oval arches were employed for spanning openings and as lines of vaults, as well as the horizontal architrave, -- that first mentioned being chiefly on buildings of the transition style and of the Early Renaissance, when the details were still frequently subject to the influence of mediaeval expression of form.

409 The Early Christian designs in Italy must have been derived in the following considerations from Early Christian art, since these were the earliest places in which the adherents of the new religion gathered for a common worship of God. What was taken from them? What was contributed by the Romanesque and the Gothic middle ages?

#### 290. Orientation.

A question more liturgical than architectural is that of the orientation of ecclesiastical structures. Where a free site existed, men adhered to the direction of the longitudinal axis from East to West, transferred from antique temples also in the earliest Christian churches, so that in Rome the altar was generally placed at the Western end, but in Ravenna at the Eastern end: the latter mode of location formed a general rule in the middle ages. Was it likewise followed in the Renaissance? No; it was no longer strictly retained on account of the fixed subdivision of the interior of the city, as well as the arrangement and location of the streets and the open squares. It soon exhibited more exceptions; but in spite of this, sufficient famous examples may be cited for the rule. In Rome is the Church of the Jesuits, in Loreto the pilgrimage Church, in Florence are S. Spirito and S. Annunziata, in Mantua S. Andrea, in Padua S. Giustina and the Carmine, in Venice S. Giorgio Maggiore, S. Salvatore and many others, are orientated. Accurate statistics on orientation have only been prepared concerning the churches of the city





of Rome; but all directions of the compass occur there!

### 291. Plan of the City; Basilican Design.

The basal scheme, -- the 3-aisled Early Christian basilica, -- to which mediaeval architecture adhered in a qualified sense, continued likewise for the Renaissance. The idea of the ratio of the width of the middle aisle to those of the side aisles and cross section was retained as Romanesque art had fixed it; the arrangement of the distances between supports and of the bays of the vaults were likewise accepted.

The basilican design with its unified internal perspective was especially adapted to characterize the House of God as an elongated structure; it appeared in the plan as a rectangular form with strongly expressed preponderation of the longer sides and by subdivision into an uneven number of aisles (1, 3, or 5) by means of open colonnades, the middle one always remaining widest; the termination was formed by a semi-circular apse.

The origin of this architectural conception Leon Battista Alberti first believed must be found in the Roman basilica of justice, to which assumption was later opposed another, according to which the basilican church was to be regarded as a product of Christian worship and spirit, created in the era of Constantine, to which conception Hübsch in particular adhered. But in the year 1847 first arose a contradiction by Zestermann, when he derived the beginnings of the Christian basilica from antique Roman palace architecture, with the proof, that the Roman patrician's house regularly contained among its parts a hall of special form and appellation; the basilica.

To these theories Dehio opposed a fourth, which will be willingly accepted in general and in detail, on account of his logical and practical deductions. Only in the houses of citizens could the first Christians have assembled, and therefore from the dwelling were the parts of the basilica derived. The tablinum became the seat of the leader, an apse; 4/10 the alae (wings) became the transepts, in which gathered the deacons and the deaconesses, the atrium became the nave, occupied by believers during divine service. Those assembled in the atrium or in the peristyle surrounded by columns must



have protection from wind and weather, without introducing darkness into the bargain. The floor system for removing rain water could no longer be retained, and the atrium displuviatum (covered) of Vitruvius occurred in its place, where the introduction of light was done in a truly antique way, by the addition of a superstructure with side windows, as was the case in the hypostyle halls of the Egyptians and the Assyrians, and likewise indeed in those of the Greeks during the era of Alexander. The structure above the entablature of the peristyle was developed into the high walls of the main aisle, which were joined by a horizontal wooden ceiling or by the visible (open) trusses of the roof.

*Note 231. Compare Dehio & von Bezold. Die Kirchliche Baukunst des Abendlandes. Stuttgart. 1884-1901. p. 63.*

These forms now occur:-- the single-aisled design with high side lights, the three-aisled and the five-aisled with high windows at the sides of the middle aisle and windows in the walls of the side aisles. The construction of galleries in the side aisles remains chiefly an oriental arrangement, but it also sometimes occurs in the West; the design of the transepts is to be termed specifically western.

Vestibule (narthex), assembly room (nave), and the room for priests (apse), form the elements of the basilica, to which arrangement the early middle ages and the Renaissance remained faithful. Piers and columns alternate in both modes of construction as supports of the clearstory walls.

As columnar basilicas are created the two Churches of S. Lorenzo and S. Spirito, as pier basilicas, the Cathedrals in Udine, Treviso, and Pavia.

The definite narthex went out of use generally toward the end of the first thousand years: if one of these became ruinous, it was no longer rebuilt. The Renaissance resumed the idea again on some buildings and embodied it in an interesting way on the Annunziata in Florence, then on S. W. Maddalena de' Pazzi there, on the Parish Church of S. Lorenzo at Chiavenna at a great scale, where a slender bell-tower rises in the midst of the fore-court; then on S. Maria at Abbiategrasso, and further on S. Sisto in Piacenza, and at other places. This then presents here nothing new in church architecture; it brings in merely an old motive, for which an effect is again but rarely created in a changed





form and a spirited way.

Just as the atrium on an Early Christian basilica was transformed into a simple portico (S. Lorenzo fuori le Mura, S. Giorgio in Velabro at Rome and others; also see Fig. 396), this procedure was also completed in the Renaissance, especially in some splendid examples, as on the Cathedral in Spoleto, connected with the arrangement of two pulpits for preaching, as shown in a classical way in S. M. Navicella at Rome, at S. M. della Grazie in Arezzo, and on S. Annunziata in Florence. A plain portico with three arches extending between two towers was erected on the Incoronata at Lodi; entirely enclosed vestibules, accessible only through a tower, were executed by the Renaissance in a splendid way at the Umiltà in Pistoja and more simply at S. Sebastiano in Mantua.

411 As the most splendid example of the later period should be mentioned a work of Fanzaga (1591-1678), the portico of the Sacienza in Naples (Fig. 396). Space was there lacking for a straight course of the steps to the portal of the elevated Church, on account of which the entrances of the vestibule were placed at the broad ends <sup>232</sup> in a very skilful way, and the steps were carried up therein.

Note 232. Compare Nohl, M. *Tagebuch einer Italienische Reise*. Stuttgart. p. 229.

But the original design of the atrium shrinks together yet more, if it be limited to the form of a great arch at the entrance portal, already employed by Romanesque art, for which we have examples on churches in Upper Italy and in the strongest manner on the gabled facade of S. Maria at Abbiategrosso. There side walls with detached columns in two stories above each other form the enclosure, which is covered by a massive semicircular tunnel vault and a gable roof above it. This motive of the triumphal arch is strongly inserted into the low arcaded porticos, that extend around the fore-court. <sup>233</sup>

Note 233. For a representation thereof, see Strack, H. *Central- und Kuppelbauten der Renaissance in Italien*. Berlin. 1882. Plate 26.

412 As soon as the design with several aisles was brought into  
413 use, the raised middle aisle became the rule in the parish



church, both in the development in three, as well as in five aisles. In the latter, both side aisles on the right and left of the middle aisle were placed under one roof (compare S. Paolo fuori le Mura in Rome), or these roof surfaces were stepped down according to the clearstory walls. (compare the Gothic Church S. Trinita in Florence).

Churches with but one aisle, such as mediaeval art frequently produced, also continued to exist in the Renaissance by right and were even preferred. Those with two aisles of equal height and width (two-aisled), such as the Gothic created in the Tyrol and in North Germany, have not become known to me in the Italian Renaissance, also those with only a single side aisle, built sometimes in the north, sometimes on the south of the middle aisle, sometimes lower, sometimes of the same width as the main aisle. They belong on this side of the Alps chiefly to the begging orders, which for reasons of economy and to provide space for the audience for preaching, placed the pulpit opposite them.

#### 292. Hall Churches.

Towards another innovation created in church architecture by the middle ages, the so-called hall churches, -- equal heights under one roof, -- the Renaissance was generally opposed. Among the few hall churches are to be named; S. M. Annunziata in Camerino in the Mark of Ancona, and the Cathedral in Pienza built by Rossellino, an experiment very unfortunate in every way, that makes use of stilted round arches in the side aisles in order to place the centres of the arches in the middle aisle below the imposts. <sup>284</sup>

*Note 284. Published in Geymuller' on Bernardo Rossellino, plate 11; also Laspeyres, plate 49.*

The hall church presupposes complete vaulting, which was there employed by the Renaissance, while the basilican design permitted the horizontal wooden ceiling of the middle aisle, as well as vaults over all aisles. In all cases was the side thrust of the vaults to be neutralized, either directly by the insertion of iron or wooden anchors or ties, or by opposing forces in the form of buttresses, stays, or flying buttresses (see Art. 60), or by both methods at the same time, if





one could not entirely trust the construction. Moreover, the Southern people were animated by a greater trust in Providence for a solution of this purely statical problem, and they were generally led by a truer feeling to the basis of what of antiquity was daily before their eyes, so that they likewise studied, observed, and measured. Compare for this purpose the mediaeval structures in Figs. 397, 398, 399, the cross sections of the Churches of S. Denis, of Longpont, and of S. M. Novella in Florence. The last named Church shows the greatest spans of the centre and side aisles with the least thickness of the walls. What masses of masonry were on the contrary employed by the French architects of the same period in comparison with the Italian masters, in order to produce the same stability! By what plain and simple means is the same problem solved in Florence! On which side is here the principle of securing by the use of the least possible material the greatest stability and strength? According to the examples selected, certainly not on the side of the Northern people!

In their basilican designs, the Italians never placed the attachment of their flying buttresses or piers so high or even extended them up to the roof cornice of the middle aisle; they rise but little above the springing of the vaults on S. Anastasia in Verona, on the Cathedral of Florence, on the Cathedral in Como, at S. Petronio in Bologna, (although on account of the walls between the chapels there, they are increased greatly in depth), and at S. Francesco in Bologna.

In contrast with the middle ages, greater boldness in the use of less material prevails in the Renaissance, together with a more highly developed feeling for spaciousness. But by the latter were likewise animated the Gothic masters of Milan, of the Cathedral of Florence, and of the great Church of S. Petronio in Bologna, where they chose 52.48 ft., 55.7 ft., and 59.09 ft., for the spans of the vaulted middle aisles of their basilicas, while those of 45.92 ft. were never exceeded in Amiens, Strasburg, and Cologne.

### 293. Transverse Aisle and Transepts.

The transverse aisle of the ancient basilica is recalled in the mediaeval churches of Italy in two prominent examples,



in the plans of S. M. Novella and of S. Croce in Florence, strongly and effectively (Fig. 200)<sup>235</sup> and it was reproduced in his new expression of form by Brunelleschi in S. Lorenzo in Florence; it became transepts in the plan of S. Spirito in Florence, where longitudinal and transverse aisles intersect, and the arms are carried beyond the point of intersection. The Latin cross with three arms of equal length and a longer one is here decidedly expressed.

*Note 235. Dehio & von Bezold. (Plate 534 is incorrect in reference to the arrangement of the vaults in the transverse aisle.*

*For the altar space, the perspective point of direction, the soul and ruler of the entire design,"*<sup>237</sup> the semicircular vaulted niche is normal in the ancient basilicas; it had to yield to the rectangular and the polygonal form in the middle ages, but came again in the Renaissance into full honor again, even though the form of the polygonal exterior (dei Servi in Siena) usual in Ravenna and Byzantium continued, as well as the masking by a rectangular exterior, or the regular form both externally and internally rectangular, as executed in the plan of S. Lorenzo. (Fig. 401).

*Note 237. See Dehio & von Bezold. p. 95.*

But the single altar space no longer sufficed, even in the Early Christian period; men sought to obtain others at the similar ends of the side aisles (compare S. Pietro in Vincoli in Rome, Cathedral in Parenzo), and in the middle ages "the cumulative veneration of the saints" required in each greater church a considerable number of altars (the ancient sketch of S. Gall gives 17 of them), for which room could only be found along the side walls of the church, or by the continuation of the side aisles around the altar apse or choir, from which resulted about the middle of the 12th century a series of small chapels (chevet choir). From this necessity and not "for the better effect of a procession" must these designs have originated, and they were likewise realized in the Renaissance.

Many of the churches with a single aisle (S. Francesco al Monte in Florence, S. Felicità, Cathedral in Montepulciano,





S. M. dei Servi in Borgo S. Sepulcro, S. Domenico in Recanati, S. Andrea in Mantua, etc.) show the chapels along the longitudinal walls of the aisle, and also those with three aisles (Fig. 402; S. M. della Catena in Palermo), also the Cathedral in Pavia (Fig. 403), but especially S. Lorenzo in Florence as well as S. Spirito there, where the chapels not only extend along the external walls of the nave, but also those of the transepts and choir (Fig. 404), if they may be so termed.

#### 295. Dome over Intersection.

But the intersection of the transverse and longitudinal aisles leads directly to a special architectural distinction for this point; it is so important that it requires emphasis, which is given in an inefficient way by small domes on S. Lorenzo and S. Spirito, but which had already been attempted in a grander manner during the middle ages on completely vaulted churches with the ground plan of a Latin cross; on S. M. del Fiore in Florence and S. Petronio in Bologna.

The intersection was to be marked here both externally and internally by a great dome, indeed comprising the widths of the three aisles! The idea ripened in the Gothic middle ages in Italy, and it could ripen there alone, where the great domed structures of the ancients gave an invitation to similar undertakings. S. Petronio was not completed, but the design is preserved for us today in the model. One of the grandest churches of the world would have been created by its execution, a dome that would have nearly attained to those of Florence and of Rome by its clear span of 131.2 ft. The eight supports of the dome on the ground plan, two of which were executed as a part of the existing church, appear far more beautifully subdivided and developed than the substructure of the Florentine Cathedral; but whether the chosen sections were ever able to receive the weight of the dome and to hold in equilibrium the play of forces therein, must well be doubted.

The pilgrimage Church of S. Casa of Loreto (Fig. 405) should be mentioned here; for it is and remains from the House outwards a Gothic structure of "astonishing" arrangement of plan and with the like grand ideas; the Latin cross with a dome over the intersection, which is supported by 8 piers and has a



diameter (97.8 ft.) equal to the width of the three aisles. The supports were also made too weak here, or a defect, which which Giuliano da Sangallo (Sept. 1499) later sought to remedy, But which Bramante first thoroughly obviated in 1509.

These designs continued to have great and permanent influence on the Renaissance masters, and the plan of Loreto is without doubt a model for the design of Christoforo Rocchi for the Cathedral at Pavia. (Compare the two plans in Figs. 403 and 405, with special reference to the beautiful arrangement in Loreto of the 4 chapels on the diagonals of the transepts.

#### 296. Crypts.

In the time of Constantine, it was in Rome customary to build memorial churches over the tombs of martyrs, when the tomb itself was placed in the closest connection with the altar; i.e., a small subterranean vault was so placed beneath the high altar, that one could look down into it. From this Early Christian "Confessio", combined with its arrangement like a catacomb, originated the late Early Christian and mediaeval-Romanesque crypt, -- the complete subterranean church with altars, which were then arranged beneath the raised choir.

419 When the original burial-place of the martyr was not in question, bones brought from elsewhere were more frequently buried in the church, and men were then satisfied with exhibiting them above ground, and they viewed the sacred bones through a vertical front wall, or they made the altar itself a receptacle for them. "The tomb is omitted from the permanent parts of the church architecture" became in the Gothic period a basal principle, and it was also firmly retained by the Renaissance likewise.

The Protorenaissance exhibited a reminiscence of the crypt design in the Church S. Miniato al Monte near Florence, while it was refused by the Early and Late Renaissance, following the Gothic. The altar table became a sarcophagus for the saint, or where the confessio was provided, the Renaissance cared for beautiful architectural accessories to it, as shown, for example, in the most perfect way in S. M. Maggiore and in S. Pietro in Rome.





## 297. Towers.

The towers are not original adjuncts to Christian church architecture. They were still unknown to the 6<sup>th</sup> and 7<sup>th</sup> centuries, and indeed they became first distinctly authentic in Rome and in Ravenna in the 8<sup>th</sup> century. They either served to receive staircases to galleries and the attics, or they were built as watch-towers. -- The earliest bells were small and were mostly hung in little towers on the roof. With the introduction of bells that could be heard further, the towers were taken for them.

The opinion that they did not belong with the parts of the church was held in Italy from the earliest period, and they were therefore indeed later placed beside the side of the basilica as detached structures. This position was typical, and it was never lost during all successive phases of architecture in Italy.

While on this side of the Alps, architects and people were enthusiastic for the external and lofty characteristics and regarded with pride the attainment of having organically united the towers with the nave, carrying them with an excessive luxury of external architecture to a height of 514.96 ft., and even made a show of a multitude of these non-ecclesiastical accessories, men remained in Italy faithful to the views of the 8<sup>th</sup> century, and the new art of the Renaissance made sparing use of these merely external gifts of the Northern art of the middle ages.

The enhancement of the power and the splendor of the interior is a later or earlier the principal affair, as well as the further carrying-out of the architectural idea, the Latin cross with a great dome over the intersection, -- which was laid down in the Cathedral of Florence, in S. Petronio in Bologna, in the pilgrimage Church of Loreto, and in the Cathedral of Pavia, -- and this remained the chief aim, for which purpose mighty towers were not required, or at most those of moderate dimensions.

The mediaeval richly developed Campanile of the cities of Upper Italy during the Romanesque period, the Towers in Cremona, Pavia, Crema, (. Gottardo in Milan, etc., are all struct-



structures not organically connected with the nave; the Gothic Cathedral in Florence places its overrich campanile at its side as a detached building, which lacks its intended spire 97.5 ft. high; the Cathedrals in Milan, Orvieto, and Bologna likewise exist as churches of the first rank without these accessories, and where it was desired to still show afar the "finger of the Lord God" and neither the joyousness nor courage of the tower or dome, they decided on a combination of both; for a tower over the intersection, as executed in Chiavalle and in the richest manner on the Certosa near Pavia, as a Renaissance work.

The Early Christian towers in Ravenna are circular or rectangular in plan: they are by exception square in Rome. To these two forms adhere most of the Early Renaissance, and on this Early Christian basis must indeed those of S. Spirito in Rome (Fig. 406) be designated as one of the best creations: a closed substructure of four stories connected in pairs by great pilasters.

With this small Roman brick tower may be contrasted the massive, unfortunately unfinished, Campanile in Ferrara, finely constructed of reddish and white marble. It likewise exhibits the dissection of the surfaces of the facades, without low connected stories, but rather lofty ones subdivided by bold architectural forms (Fig. 407), in its way one of the most dignified towers of the entire style, even if not entirely free from a slight tinge of the recently ended art period. On this basis would it have been easier to produce a spirited extension, than by a model-like succession of regular columnar orders above each other. And so might I also place higher the Venetian Campanile of Madonna dell' Orto (Fig. 408)<sup>239</sup> with its simplicity and closed lower stories, than most of those surrounded by columns or pilasters in the later period.

*Note 239. From Cicognara. p. 19, 20.*

Leo Battista Alberti gave for the bell tower as a detached structure a special prescription, when he preferred the circular form of Ravenna and crowned it by an open tempietto and a domical roof, while he enclosed the ground story by a portico in form of a square. (Fig. 409).





The design may be accepted as spirited, but it has too little inner life. To it adheres the vitally fresh Sanmichele in his Tower at S. Micheli near Verona, which shows above a square substructure great Palladian windows in another story, above this being an octagonal story with columns at the angles, above which as a termination is a circular tempietto with a dome and lantern. (Fig. 410).

The two towers of S. Spirito in Florence (Fig. 412) and of Madonna di S. Biagio in Montepulciano (Fig. 411) are simpler representatives of the style, when that of S. Spirito (begun by Baccio d'Agnolo; died 1548; and completed from his design under the rule of Cosimo I) is more original in treatment and is not restricted to motives previously employed, like that of the older Sangallo. Like the adjacent Church, it may be "one of the most perfected structures of the High Renaissance"; but the lack of a certain warmth must also be recognized in it. It is true that in spite of its defective twin brother, that only rose a few yards in height, it stands finely in the general group, and according to Laspeyres<sup>240</sup>, "its value especially consists in this, that in contrast to so many projects for towers, on which the Renaissance masters exhausted their gifts of invention, it must have made the great change from paper to stone so readily, that nothing essential to the first idea of its author was lost. A master tower of the art period in which, so to speak, the creed for towers found expression." (Fig. 411).

*Note 240. Laspeyres. p. 19, 20.*

On a square mediaeval substructure changed into an octagon, as in Montepulciano, rises the upper portion of the Tower in Modena (Fig. 413), which is not entirely free from mediaeval forms, yet still remains a sound and interesting creation. As the last link in the chain may be mentioned the square Tower of S. M. del Carmine in Naples (restored in 1769), likewise changed into the octagon, which is at least picturesque with beautiful effect (Fig. 414) and is otherwise well developed.

As enduring efforts of the Barocco style may be counted the double towers of S. Alessandro in Milan. What Maderna



designed for S. Pietro in Rome were beautiful pavilions on broad substructures, but not towers, and what Bernini gave certainly did not lack picturesque charm: "the graceful form of the towers, the open and cortico-like treatment of the stories, the avoidance of large wall masses,"<sup>241</sup> are to be praised and acknowledged in a high degree; but the solution appears somewhat theatrical and too little earnest in comparison with the other portions of the building." Under the same judgement falls the side towers of Juvara on the famous Superga near Turin. (1717-31). (Compare Fig. 498).

*Note 241. Compare Gurlitt. P. 351-353.*

Likewise what master Vanvitelli did with the bell-tower on the Sasa Santa in Loreto did not enhance his fame. (He created the two stories and the swelled dome).

Giuliano da Sangallo furnished<sup>242</sup> for S. Lorenzo in Florence the drawing for a campanile, that does not belong with the happiest things created by the master, and that it was not built scarcely remains to be lamented.

*Note 242. See Geymuller.-- Giuliano da Sangallo, Plate 2, Fig. 6.*

Guzzrini's Tower on S. Gregorio in Messina is heavy, and its domical roof is surrounded by spiral ornaments, which is crowned by the papal tiara with two crossed keys, forming a "Barocco eccentricity", that does not have its like in Northern Italy.

To this last experiment is also opposed one of the earliest examples of Renaissance art by Bernardo Rossellini,<sup>243</sup> the campanile at the Cathedral in Pienza, completed in 1463 in travertine stone. Dry and poor the beginning, turgid and eccentric the end, -- splendid alone being the intersection tower of the Certosa near Pavia!

*Note 243. See Geymuller, Pl. 11; also Gaspeyres, p. 18.*

#### 298. Sacristies.

Other later additions, frequently on the North side of the church, but regularly placed in the vicinity of the high altar, are sacristies, which were intended for the use of the clergy, for storing the ecclesiastical vestments, the church treasures and books. After the 13th century, they were like-





likewise supplied with altars and were used as oratories. They frequently form in the Renaissance splendidly executed and treated architectural parts of the churches, as shown in S. Lorenzo (1426) and S. Spirito (1496) in Florence (Figs. 63, 64)<sup>244</sup> which were built as charming little central structures, with which are connected the names of the most famous artists, Giuliano da Sangallo, Cronaca, Sansovino, and Brunellesco.

*Note 244. Also see Laspeyres, plate 10.*

A very extensive design must be the new Sacristy of S. Pietro in Rome, built by C. Marchioni (1776-80), which is connected with the Church by two corridors and contains the general sacristy in a domed room <sup>49.2</sup><sub>245</sub> ft. square; 15 subordinate rooms also adjoin the latter.

*Note 245. Compare the ground plan in Letarouilly-Simil, Vol. 2, plan 56.*

Chapter 30. External Architecture of Churches with one Aisle and the Basilican.

#### 299. Review.

"Early Christian architecture gives as the external architecture for enclosing the interior only the wall masses absolutely necessary and nothing beyond this." Merely the entrance facade received a richer architectural development, even mosaic ornamentation, as for example, on the Cathedral in Parenzo and at other places, while the sides and choir remained in rough masonry. The Protorenaissance proceeded in the same manner with S. Miniato al Monte in Florence. On the contrary, the the Renaissance and Gothic middle ages extend the architectural members over the entire exterior and even develop a maximum richness on the choir and on the sides.

As on the palaces, we must also here define certain tendencies that influenced the form of the exterior. Here as there were mediaeval and antique elements, with which they are connected; frequently was the mediaeval system retained, then being covered by Renaissance forms (interior of S. M. della Cattedra in Palermo and S. Francesco in Rimini, -- pointed arches resting on pilasters with broken entablatures); they attempt-



attempted tastelessly and clumsily to succeed with the antique alone, until men believed that they had found in the realization of the antique temple facade<sup>or</sup> in the architectural arrangement of the Roman triumphal arch the proper means of expression for the Renaissance church.

### 300. Antique Tendency.

The antique tendency is followed in a still timid way by the little Brotherhood Church dell'Oca in Siena,<sup>246</sup> the Church S. Pietro in Montorio (Fig. 415) and S. Agostino with its basilican design (Fig. 416), both in Rome. The cornices, doorways, angle and wall pilasters, even though still restricted in detail and in proportions, yet are otherwise executed with conviction, where the mediaeval rose window still retained its rights, until in the facade of S. Andrea in Mantua, the Renaissance freed itself from every reminiscence of the directly preceding art period, and in a yet higher degree in the main facade of S. Giorgio in Venice (Fig. 417), where in place of the graceful proportions and the gabled form of S. Andrea, the proportions and forms of the antique Roman temple in the perfected style appear. (Fig. 418). The later period abandons the great order on the wall surfaces and takes up the treatment of the facade in two stories, at first indeed by the need of an elevated loggia for the dispensation of the blessing, -- *Urbi et Orbi*, -- as on S. M. Maggiore, the Lateran Church, S. Marco, and S. Apostoli, all in Rome. An exception is here made by S. Pietro, wherein the two stories are found within the retained colossal order.

*Note 246. See Geymuller; Fornasco di Duca del Quasta, Pl. I.*

As Alberti employed on his palaces the small orders in stories above each other, like Roman facades of theatres, so he attempted to adapt the same basal idea to the entrance facade of S. Francesco in Rimini, according to existing remains and to the commemorative medal<sup>247</sup> of Matteo de' Pasti in 1450, but which he again abandoned on S. Andrea. The paracoco adopted by preference the smaller subdivision of the height, as represented by S. Alessandro in Milan, S. Trinita in Florence, S. M. a Scalzi in Venice, S. Vincenzo ed Anastasia, S. M. in Campitelli, S. M. della Pace, and especially by the Church Gesu in Rome. (Fig. 419). Even on the Gothic substructure of S. M. No-





Novella in Florence, Alberti knew of nothing else to add, except a series of small pilasters with an antique temple gable.

*Note 247. Reproduced in Muntz. Vol. 1, p. 407.*

For the basilican design, a difficulty always appeared on the façade, the connection of the low roofs of the side aisles with the raised clearstory. Men were given the choice of taking the solution in the Early Christian basilica, which is properly no solution at all, or to extend the side aisle in form of a portico on the gable façade, when the portico received the same shed roof as the side aisles, or of permitting the end walls of the shed roofs to adjoin the gable of the middle aisle, as the slope of the roof demanded or caused. Examples:-- S. Crisogono (Pl. 42)<sup>248</sup> S. M. in Donnica, Basilica Liberiana (Pl. 61)<sup>248</sup>, S. Giovanni in Laterano (Pl. 70)<sup>248</sup>, Basilica Vaticana (Pl. 80)<sup>248</sup> S. Paolo (Pl. 80), and Basilica Ostiense (Pl. 82)<sup>248</sup>, where the Roman half pediment, or for curved roofs, the quadrant form appeared. Men might likewise experiment with something novel.

*Note 248. Canina, L. Ricerche sull' Architettura piu propria dei Templi Christiani. Rome. 1846.*

Alberti chose the latter method, that the late phase of the Renaissance also followed, while Palladio continued to adhere to Roman models. The first artists of the Renaissance placed before the shed roof the console, elsewhere a transitional form on a small scale, here transferred to a large one. (Figs. 420, 421). In order to make this form endurable on a great scale, he inspired life into its outlines by a delicate inlaid ornamentation and thus created a classic model on S. M. Novella in Florence (Fig. 421 B). Translated into relief, sometimes convex or concave, extended or much swelled, it later became the favorite motive of the succeeding, and especially of the later period (Figs. 420 A, 422, 423), frequently offending good taste, or it was even increased to ugliness, often depressing the other details in the general mass, as especially occurs on S. Agostino in Rome. On account of their tastelessness, the consoles in Fig. 416 are suppressed in the reproduction of the otherwise so chastely designed façade, with reference to the façade of S. Francesco al Monte near Florence,



where is retained next the clearstory the similar arrangement without consoles.

On the contrary, how simply did the architect treat the village Church at Isola Farnese, and yet how charming and unaffected is this little church building! (Fig. 424).

But it must be said, that according to clear and broad views, the execution of the facades on the most important churches remained incomplete. Not a single one of importance is given by Brunellesco, Michelozzo, Rossellino, Orsina, or by the two elder Sangallos. What Giuliano designed for the facade of S. Lorenzo in Florence<sup>249</sup> (4 designs) is scarcely satisfactory. They are merely disconnected decorative pieces, behind which anything else might stand just as well as a church. A basilican design would scarcely be sought behind such; an attempt to solve the conflict between the slope of the shed roofs of the low side aisles and the raised middle aisle has purposely erred. The side facades, so far as their designs do not come from the mediaeval period, as for example, on the Cathedral in Como, remain simple and plain, as shown by the basilicas of Brunellesco. Without any subdivision of the walls by pilasters or columns, windows are arranged on the latter at regular axial distances. If an architrave extends along the entablature, it projects little from the wall surface, as on S. Spirito in Florence, or it is apparently supported by flat consoles at definite intervals, as on S. Lorenzo.

*Note 249. See Geymuller; Giuliano da Sangallo. Pl. 9.*

There is indeed best expressed what the masters of the Early period desired; simple and yet dignified in proportions, yet with the avoidance of every useless or merely decorative accessory. Circular windows in the walls of the side aisles, tall round-arched ones in the high clearstory walls and a subdivision of the external walls of the choir chapels by blind niches and pilasters.<sup>250</sup> The side facades of the Church dell'Osservanza in Siena have in addition to the cornice with consoles only a few round windows (bulls-eyes) as the sole architectural subdivision.

<sup>301</sup> *Mediaeval Tendency.*  
*Note 250. See the proper illustration in Laspeyres, Pl. 6.*

432 The forms of facades still influenced by the middle ages





invariably exhibit more warmth and are more like the inventions of the Northern peoples in the matter of church building. How far these were influenced by the power of habit, by education, and by impressions in youth, and how far an objective decision remains thereto, we will not investigate. The facts remain uncontested; we also gain interest in these creations after repeated visits and studies of Italian art monuments, rather than return from there with a progressive knowledge of the inner nature of the Renaissance. And whoever wishes to promote today church architecture in the style of the Italian Renaissance, who will labor more joyfully and with greater results, then will he commence with these productions, rather than with the endeavors of the later period, now hunted to death. In the former is still to be found living novelty, but not in the latter. And just in the smaller churches, oratories and chapels, were the most charming things attempted; for these became "state portals" by their overrich employment of ornamental motives, decoration by figures, and finely wrought small subdivisions. The Confraternity dei Laici in Arezzo, S. Bernardino in Perugia (built 1461; Fig. 425), the small red brick facade of S. Spirito in Bologna, the Madonna di Galliera in Bologna, may prove this. Compare in the same sense the Memorial Chapel of S. Andrea before Porta del Popolo in Rome (Fig. 427) with the Oratory of S. Spirito in Bologna, and the little Chapel near Ragusa (Fig. 428), -- which is more capable of development, which has the more soul?

*Note 251. See Laspeyres, pl. 39; also Geymuller.*

*Note 252. See Zeits. f. Bauw. 1864. p. 22.*

But how powerfully it was likewise executed on a great scale is shown by the facade of the Certosa near Pavia (Fig. 429)!

"Its motive, independent of the antique orders, is that of the Lombard-Bonnesque, a graduated church facade with projecting pilasters and transverse arched galleries; within these fixed forms is sheltered all conceivable richness in wisely graduated expression. The facade stands there without and like, famed throughout the world for its overrich ornamentation, and aside from this, perhaps the one best conceived in the 15th century."-- Thus Burckhardt, after he had changed his formerly



incorrect opinion after repeated visits to the building.

*Note 253. See Burckhardt, J. Der Cicerone. Basle. 1860. v. 120, 121.*

### 302. Facades with Special Forms of Roofs.

As a third group should be remembered a number of churches indeed proceeding from Venice, in which the form of the roof is expressed on the facade as correctly as could be desired: in these the roof of the middle aisle has a semicircular shape or the form of an inverted snip, and the roofs of the side aisles exhibit the cusarant shape. The antique gable and shed roofs are abandoned and a form is chosen, which secular public buildings of the early and late periods of the Renaissance likewise show. (Palace del Consiglio in Padua, Palace del Comune in Brescia, called la Loggia, Basilica in Vicenza).

Magnificent is this new idea, yet more interestingly expressed by the peculiar construction of the Cathedral in Sebenico (Dalmatia), according to the cross section in Fig. 430. Its purpose is expressed in the facade. Begun in the Gothic, continued and completed in the Renaissance style, constructed in white Istrian limestone without a bit of wood! The main and side facades still show Gothic portals, windows, and cornices, and the choir windows have a pretty combination of Gothic tracery and Renaissance supports. A work perfect in itself, which demands the highest appreciation. (Figs. 431, 432).

Here also belongs the little Church S. Salvatore in Ragusa (Dalmatia) on which behind the semicircular stone pediment is indeed placed a low gable roof, but which appears not less beautiful in exterior, in proportions, and in details. (Fig. 433). On account of unity in composition and style, this facade can be placed higher than that of Sebenico, and the little facade of S. M. dei Miracoli must also be more highly esteemed than the large one of S. Zaccaria in Venice. (Fig. 434). On S. M. dei Miracoli, the form of the roof determines the semicircular stone pediment: on S. Zaccaria, the pediments are merely ornamental pieces!

In this group, even if not pure in the ending of the system of the facade, is to be placed the little Church on Ronigo near Verona (Fig. 435), also conditionally S. Giovanni in Monte at Bologna, with the motive of the semicircular and quad-





quadrant pediment in the dryest conceivable form (the 13<sup>th</sup>, 14<sup>th</sup>, and 15<sup>th</sup> centuries were busied in it)<sup>254</sup> In this group likewise might have been carried on a further development with good results.

*Note 254. A representation of this building is to be found in Malaguzzi Valeri, p. 74.*

### 303. Building Materials.

As for the palaces and public buildings, crystalline and common limestone was employed as the building material for these works, travertine being preferred in Rome (S. M. Maggiore, S. Pietro, S. M. del Popolo, etc.), sandstone in Tuscany, wrought by the stonecutters, rubbed, hatched, or also coated with stucco, as on S. Spirito in Florence, on S. M. da Carignano in Genoa, and on the Steccata in Parma. Bricks and decorated terracotta were used in masonry and polychrome work in all Upper Italy, in Bologna and down toward Siena (S. M. della Grazie in Milan, Certosa near Pavia, S. Caterina in Siena, etc.), then marble veneering on the magnificent churches of Venice and Genoa, likewise in Florence and other places, as well as mosaic. (S. Miniato near Florence).

### 304. Base.

The arrangement and the development in forms of base, portal, windows, and cornice require richness, and the effect of the facades, the alternations between openings and masses, earnestness or a more pleasing exterior of the structure.

According to the expenditure for the facade was likewise arranged the treatment of the base, as in secular buildings, proceeding from the simplest to the richest. Without any special prominence thereof is the wall masonry executed on S. Francesco al Monte near Florence, and as a simple plinth with a transition moulding on S. Lorenzo and S. Felice there. Like a pedestal, on account of the subdivision of the facade wall by columns and pilasters, is the base constructed on S. M. Novella in Florence, on S. M. a Scalzi in Venice, and on S. Paolina in Lucca, and it is divided into three parts with plinth, dado, and cap, on S. M. de' Miracoli in Castel Rigone. (Umbria).

As a seat steps, just as on Tuscan palaces, do we find the



base on S. M. delle Carceri in Prato, on Madonna di S. Biagio in Montepulciano; with a threefold division above this on the Church della Madonna in Mongiovinio, and as vertical asplawork with an ornamented crowning band on S. Francesco in Rimini.

The base on the facade of the certosa near Pavia (Fig. 436), -- without model and without imitation; for only once in the world is such richness executed, -- is composed of a lower part adorned by small pilasters, whose intervals are filled by medallions of Roman emperors, over this being a part with relief sculptures from Biblical history, enclosed by decorated frames with angle medallions between splendid pilasters.

### 305. Portals.

Beginning with the richest treatment of a main entrance, the portal of the Certosa already mentioned is to be placed in the first rank. Coupled columns support an antique entablature, above which rises an arch enclosed by a rectangle and with tympanum decorated by figures. (Fig. 437): then the fine portal of the Cathedral in Como, where the internal and the external sides of the Southern entrance doorway are arranged with coupled pilasters between niches with figures, above it extending a richly ornamented antique entablature, spanned by a triply subdivided semicircular arch, the middle one of these being divided radially and showing ornamentation containing figures in relief, while the sculpture in it has for its subject the Flight into Egypt. The arches are enclosed by a rectangle, and over this is constructed an antique tympanum, that shows the Figure of our Saviour surrounded by angels' heads. The inner side is more simply formed, and it is only noted, that there the shafts of the pilasters are divided in height into 3 panels, which are adorned by niches with figures. A superfluity of richness with tall candelabra columns and luxuriant figure ornament, with a shrine containing a Madonna surrounded by musical angels and boys, is shown by the Western portal of the Cathedral, perhaps an architecturally criticizable composition, but one of the most costly creations of the Early Renaissance in Upper Italy. What wealth and grace of motive, what wonderful execution, to which even the Certosa has nothing better to oppose! The portal of the





left side facade (1505-7) is due to Tomaso and Giacomo Rodari.

*Note 255. See illustrations thereof in Santo Mondì, Plates 12-17; also in Barelli, plates 16, 17-20.*

Another precious gift of the Early Renaissance is the interesting conception of the middle entrance to S. M. dei Miracoli in Brescia (1500-23), a design only to be explained by the peculiar purpose of the building. Four free columns form a kind of porch, that supports a richly ornamented closed superstructure; this may be regarded as a "stone reliquary", beneath which is the entrance to the interior. "Handsome and radiant in its inexhaustible wealth of detail, the middle part of the facade projects," charming the observer and causing him to forget at first the unstructural character of the whole. <sup>256</sup>

*Note 256. See Meyer, part 2, p. 225 et seq.*

As another magnificent piece should be also mentioned the portal of S. M. Maggiore in Bergamo. The columns beside the entrance support these strongly ornamental consoles, on which rests a semicircular coffered tunnel vault, that is again enclosed by a rectangle on its front. This upper projection affords additional protection to the tympanum and to those entering during bad weather.

The Tuscan and Roman churches of the Early period are satisfied with a simple treatment, for they renounce the superfluity of ornamental decoration and receive rectangular pilasters instead of columns, but which then again support an antique entablature with arched roof and tympanum (Fig. 428; portion of the portal of S. M. della Querceta at Bagnaja). To the rectangular pilaster succeeds, retaining other ornamental accessories, the Corinthian pilaster with low relief at the entrance portal of the portico of S. Marco in Rome and at the Badia at Fiesole (Figs. 439, 440); on the latter is also arranged above the entablature an attic-like superstructure, that is crowned by a vacant semicircle with acroterias at the angles and apex.

The exteriors last mentioned show original and masterly treated mouldings, and especially the portal of the Badia, which easily permits recognition of the architects as designers in the first rank, as likewise shown by the entire noble



exterior with its wonderfully beautiful proportions.

445 How brick architecture solved the problem is shown by Fig.  
446 441.; the fine portal of S. Caterina in Bologna with triply  
448 stepped pilasters and the shell above the antique entablature,  
made of red terra cotta, -- an ornamental piece of decoration  
of the first rank.

Most simply appear the entrance portals on the early churches in Siena and Rome; as plain doorways with horizontal or pointed caps, as on S. Pietro in Montorio (Fig. 415) and S. Agostino in Rome (Fig. 416). A doorway with columns and a pointed cap is shown by S. Salvatore in Ragusa (Fig. 433). On a design with three entrance doorways on the main facade, there is usually arranged a larger central doorway with two smaller side doorways of similar form.

Columnar portals with broken and curved pediments, with cartouches and sculptures above and between these, belong to the Barocco period, and there may be named as examples; S. Gregorio in Messina, S. M. in Campitelli at Rome, S. M. da Garignano in Genoa (Fig. 486; general view of the Church), and many others.

The doorway openings were closed by simple framed folding doors generally made of larch wood, or by paneled leaves with carved framework, as for example, on the Colleoni Chapel in Bergamo (Fig. 246 c), and similarly on the Baptistery and on the Cathedral in Parma; the main and side doors on the latter are executed with carved rosettes on the panels and with bronze pins at the intersections of the framework; high up on a transverse piece is inscribed:-- "1493. LUGGINS FLACHINS PARMENS. COCINAVIT." (Should be concinnavit).<sup>258</sup> Magnificent wooden doors are still to be found on the Pazzi Chapel in Florence.

*Note 258. Also see Burckhardt. Der Cicerone etc. Edit of 1898. p. 409.*

Bronze doors ornamented by reliefs are still preserved for us in the old Sacristy of S. Lorenzo in Florence (already referred to; see Figs. 246 a to h); Fitted in bronze jambs and most wonderful in all ages are those of Lorenzo and Vittorio Ghiberti in Florence, whereby the fame of Andrea Pisano (1336) is not lessened, who furnished the first bronze doors for the





same building. On these are vividly natural compositions in relief in quatrefoil panels; on the former are rectangular panels that receive figure representations. Lorenzo Ghiberti executed one pair of leaves in 1403-24 and the other in 1425-52, while Vittorio, the son of Lorenzo, made the jambs of Pisano's doors (1452-62); they remain one of the world's wonders, and the great Florentine did not err, when he said that they were worthy to adorn the gates of paradise. The door jambs have flat ornaments on the side surfaces, and on the front surfaces are garlands of fruits, birds, as well as heads, full and undercut work, "yet as naturalistic as if cast from the object itself." (Fig. 442). The external surfaces of the doors were once entirely gilded; vestiges thereof still remain in abundance, which with the patina of the bronze have a charming effect and correspond to our modern taste better than in the original condition.

Likewise Filarete's bronze doors of the great central portal of S. Pietro (1439-45) should not be forgotten here, even though they do not attain to the power and charm of those of Ghiberti. That Pope Sixtus IV had executed on the fore-<sup>359</sup>most church of Catholic Christendom was excelled by Florence.

*Note 259. On the value of this work, see Meyer, Vol. -1, p. 82.*

### 306. Windows.

The windows in the clearstory and the side aisles are formed as plain round openings, or as richer rose windows with radial bars (Rome, Sebenico, Ragusa, Florence), besides which occur the tall and narrow round-arched form, quite in the mediaeval style, or they are spanned by lintels and even by segmental arches in the late period. Their architraves have the simplest mouldings, which again give place to very rich forms.

The transition style exhibits in Fig. 443 the rectangular form; the lintel is supported by a small and slender Tuscan column; beneath the former are found two coupled round-arched windows with mediaeval tracery. (Choir window in Cathedral in Sebenico). The Early Renaissance gives a rich example of another rectangular window (Colleoni Chapel in Bergamo) with great use of pilasters, small fluted and twisted columns and



candelabras, free figures and medallions. The use of marbles of different colors and overloading with ornamental forms give to these windows something of a secular character, although the peculiar obstruction of the opening for light (Fig. 444) by little columns set closely again lessens this.

Here again the Certosa near Pavia presents the climax (Figs. 445, 446) by the strength of its love of ornamentation, yet with clear and good proportions. The slender and tall acule windows, whose arches are borne by candelabra-like supports, is enclosed by a rectangular architrave, and this again by a second, which is covered by a frieze and a cap with the richest sculptures; on the cornice lie dragons with coiled tails or scrolls, on which rest female figures, or which festoon an interposed candelabra. The whole projects from a ground of square panels with medallions and shields of arms, -- the proudest, that the decorative sculpture of Upper Italy has ever created in architectural details!

Likewise has the master of the Cathedral in Como omitted no means of making its basally Romanesque windows with splayed jambs incessantly ornamental by pilasters and pediments (Fig. 448), while again the Tuscans remain as plain and simple as possible in the architraves of their windows (Fig. 447; compare also S. Annunziata in Arezzo, S. Spirito in Florence, etc.).

451 The Barocco style employed wider openings for light and gave architraves to them, which vary but little from those of the windows of contemporary palaces. (Fig. 449).

Early Christian architecture favored light in the interiors of churches; men preferred light rooms. The admission of light usual in Rome occurred in an effective and beautiful way through the windows of the clearstory, while in Ravenna the side aisles and apses also received windows for light, which as already stated, was connected with the position of the altar at West or East, and which the Roman Christians placed in the West, those of Ravenna in the East.

during the middle ages, daylight was also shut out in Italy by dark and colored glass. The Renaissance could not use these on account of the richly colored decoration by the pain-





paintings on the walls and ceiling and was satisfied with transparent pieces of glass set in leads, arranged in pleasing patterns. Clear and beautiful daylight; all mystical effects excluded!

The closing of window openings with glass was known to the Early Christian period, as well as in antiquity; but its use was more limited. perforated stone slabs and wooden lattices, transparent gypsum, fluor spar (*fenestrae gypseae*), must have served as substitutes therefor. The proto-Renaissance still employed in the choir of S. Miniato thin polished slabs of marble for closing the windows, which in the morning, while the sun is still low, admitted in the most charming way a warm yellowish light into the interior.

Tasteful patterns of leading were moreover already common in the churches preceding the Renaissance; men preferred small round pieces, which on Ptolemaean were already mentioned as filling church windows already under Abbot Lintnar (984-49). <sup>260</sup>

*Note 260. Compare Geiges, F. Der alte Fensterschmuck des Freiburger Minsters. Freiburg. 1902. p.30.*

The windows of an aisle in the Certosa near Florence still possess painted glass, paintings in different colors on transparent glass, allied in composition and in the use of colors to those in Library Laurenziana in Florence. The outermost apsidal chapel of S. V. Novella in Florence, left of the choir and of one entering, likewise still possesses two windows with transparent glass, that bear the arms of the Medici, here the 5 red balls occur on a yellow ground and yellow crosses on a blue ground. The chapels directly on the left of the choir still exhibit remains of an original, though simple, Renaissance glazing. The same Church has in the round windows of the clearstory pieces of clear glass with a coat of arms in clear and colored glass inserted at the centre.

S. Lorenzo in Florence has moderately large pieces of clear common glass, while the round windows in the choir of the sacristy exhibit pieces with a colored round piece. The windows of the famous Chapel of the Medici in S. Lorenzo are each closed by six simple pieces of white glass. The windows in S. Spirito at Florence likewise have white pieces of glass of



square shape (68 pieces in each window), and they bear a colored medallion in the central space (eagle with colored border). A small window above the altar of a side chapel is for about one-half glazed dark with a colored shield of arms supported by cupids; above this again succeed transparent pieces with leading in good patterns.

A window of the Church *madonnalea de' Pazzi* (Via de' Pinti in Florence), in a side chapel on the left, is enclosed by a narrow colored border, has white pieces of glass like mother of pearl, colored sapajous, a colored medallion at the centre with a coat of arms (lion and bear as heralbic animals, also another with a figure).

### 307. Entablatures.

The entablatures mostly bear the antique character and accordingly consist of architrave, frieze, and cornice, treated with more or less richness in details. The architrave is divided into several bands, the frieze is plain or is beset with round disks, and also by festoons, the main cornice is only furnished with crowning and supporting members on the projecting portion, or with egg-and-dart mouldings, agreeing with the normal Corinthian cornice, as is the case on the Chapel of *Palace Turchi*, and the Churches of *S. Caterina* and *S. M. delle Neri* in Siena.

The Church *Osservanza* in Siena has a simple modillion cornice without frieze or architrave, the Cathedral in *Como* the richest membering with echinus, dentils, and modillions.

*S. Lorenzo* in Florence exhibits a noble, though simple treatment without the use of decorated ornamental members, the main cornice without dentils and modillions.

The same treatment is applied to pediment cornices, as the execution shows on *S. Agostino* in Rome, *S. giorgio* in Venice, and many others.

## Chapter 31. Interiors and their Parts.

### 308. Interiors.

The effect in the interior is in the first place determined by the arrangement of the plan, is also dependent on the design with one or several aisles, then on the mode of treatment of





the ceiling, and lastly on the subdivision of the walls. That the arrangement of the windows, their magnitudes and the mode of closing them, and the combined effect of monumental painting and sculpture also largely contribute, has previously been stated. The impression of nobleness must be produced by the architectural exterior; that of magnificence depends on the costliness of the materials, and especially on the nature of the decorative treatment of the interior.

The most splendid things were herein attempted by the Renaissance and were also realized, as shown by the Certosa near Pavia, S. Pietro and the great basilicas in Rome, distinguished by noble conceptions. A superabundance of the noblest building materials, of marble and of noble metals, stucco-work and painting, with the highest development of magnificence, are exhibited by the church interiors of the Barocco style. (Compare Church Gesù in Rome and the churches of Southern Italy in their frequently offensive obtrusiveness).

### 309. Ceilings and Roof Trusses.

With the so-called visible roof trusses as a ceiling, though with variously colored painting thereon, the Protorenaissance is satisfied in S. Miniato, and without this, the early Renaissance in S. Francesco al Monte in Florence and S. Francesco in Rimini.

It was followed by the horizontal coffered ceiling of wood, after antique models of a good period, with square or rectangular panels between enclosing timbers at right angles, the intersections beset with rosettes. The two most beautiful examples of this kind must be that executed by Marco de' Dolci (1467-71) in S. Marco (see Plate succeeding page 456) and that by Giuliano da Sangallo<sup>261</sup> in S. M. Maggiore at Rome. The former is treated in blue, violet, and gold, as in the adjacent Plate, the latter in white and gold, with "wisely moderated richness of golden ornaments on a white ground," which is but seldom found elsewhere."

*Note 261. Vasari ascribes the ceiling to Antonio. -- In the May number of "Rassegna d'Arte" it is sought to prove that Alberti was its master.*

A very magnificent work in the same sense is likewise the



still strongly subdivided ceiling of the Cathedral in Pisa from the end of the 16th century. (See Plate next page 138). A white coffered ceiling painted on a blue ground and of the early period (1497, by Pier Antonio dell' Abbate) is well preserved in the upper story of the Scuola del Santo in Padua.

From the principle of the subdivision into coffers based on the construction with ceiling beams differ the wooden ceilings of the later period; a fanciful division without any organic connection with the interior, a play of polygons, rounds, elongated painted panels and the like, -- supplants the organically subdivided older form. All these ceilings are left in the natural color of the wood, or they are painted in different colors.

"With happily combined architectural and plant richness" is to be mentioned in the former kind the well carved ceiling of the Badia in Florence (executed by Segaloni in 1625), and among the colored, that of the Annunziata by Girolamo Perri, with as a gayly painted Barocco work, the gilded ceiling in S. Apollonia in Florence. As already degenerate, but "as a bold piece of magnificence", is yet to be cited the ceiling of S. Stefano de' Cavalieri in Pisa, constructed after 1600.

As a work of about 1550, the coffered ceiling of the Church S. Pietro in Perugia is worthy of mention, and as a beautiful piece of "wooden vaulting," the ceiling of the right side aisle of S. Giacomo dell' Orto in Venice.

The most imposing and magnificent coffered ceilings are presented by the Roman Barocco style with its frequently bizarre limitations, in which besides the use of rich gold, the colors blue, red, green, and white, are also employed. Most were executed about 1600, among them being the finest in S. M. Trastevere at Rome. Others are to be found in S. Crisogono, S. Cesareo, Araceli, in the Lateran, in S. Agnese, etc.

Vaulted stone and horizontal wooden ceilings were constructed in the interiors of the great basilicas of Brunellesco, in S. Lorenzo and S. Spirito at Florence, where the middle aisle shows the horizontal covering, while the side aisles and the intersections are vaulted, the latter in the form of moderately developed domes. (Fig. 450; interior of S. Spirito).





377 - Complex vaults over all parts are shown by the already mentioned churches of the Transition style, among others:— S. Maria della Catena in Palermo, the Cathedral in Sebenico, and of the Earlier Renaissance, the Cathedral in Como, as well as S. Andrea in Mantua. In the latter, Alberti utilized the coffered tunnel vault, which then, with and without intersecting compartments, remained a preferred motive of the Later Renaissance. (Compare S. Giorgio in Venice and S. Pietro in Rome).

The sole very important influence on the forms of Renaissance vaulting was retained by antique art, whose mighty undertakings in the domain of the art of vaulting were carried on at a greater scale than at present, especially in the great designs for baths.

477 - The middle ages could offer little to the Renaissance under such circumstances: it felt itself far more strongly attracted by the great structural undertakings of the antique, and it continued to be rather disposed against the supposed attainments of the art period first mentioned. In this sense is the antipathy of the Renaissance to the cross vault characteristic, that Baccio Pintelli (1580) even employed in his churches, though without ribs. "Delcebuono was the last, who produced a light and noble effect with ribs and oblong cross vaults;" in Monastery maggiore at Milan. In S. Agostino in Rome, Pintelli still retained the mediæval projecting diagonal ribs, but as previously stated, he omitted the separating ribs between the separate compartments.

More favor was received by the "disguised" cross vaults, which were developed into spherical surfaces towards the crown, and in this form were better adapted to receive surface ornamentation.

The prevailing forms continued to be tunnel vaults with semi-circular or elliptical cross section, especially those with intersecting transverse compartments, next the regular and irregular spherical vaults (Bohemian vaults), as well as the spherical dome on pendentives, and for apses and chapels, the true quarter sphere or niche vault.

The surfaces of the vault were either plain and coated with plaster or animated by coffers (S. Andrea in Mantua), covered



by paintings (Choir of S. M. del Popolo in Rome with the magnificent color decoration of Pinturiccio), entirely covered by stucco ornaments, as on the domical vaults of Madonna delle Grazie at Brescia (Fig. 451), or adorned by both stucco-work and painting, as on the vaults of the side chapels in S. M. sopra Minerva at Rome.

### 310. Wall Surfaces, their Decoration and Subdivision.

The subdivision and decoration of the wall surfaces in the bays of the middle and side aisles are determined by the arrangement of the openings for light, by the dimensions of the enclosing and supporting elements, and by peculiarities in the arrangement of the ground-plan, as well as frequently by the chosen kind of ceiling.

A representation of the solution of the problem for an interior in a single aisle with chapels is given in Figs. 452, 453, where it must be remembered, that S. Francesco near Florence has the so-called visible roof trusses and S. Maurizio in Milan a vaulted ceiling.

In both cases were executed special subdivisions in the bays, that are marked by pilasters. The same is the case in the illustrations shown in Figs. 454, 455, vaulted churches of the later period, where the points of support are especially accentuated by columns set before them in the antique manner (designs of statues).

The clearstory walls and their ceilings rest on piers, as Alberti built in S. Andrea in Mantua or as is the case in S. Pietro, and then the Renaissance adopts the same effective motive, that was employed with such success on the facades of palaces (cancellaria in Rome, P. Bevilacqua in Verona), -- the rhythmic bay (Figs. 456, 457), producing therewith the like imposing effect as in secular buildings. But still more peculiar was the effect, when the pier was resolved into two supports by interposed arches, as in S. Salvatore in Venice, and these were joined in the middle aisle by narrow tunnel vaults like widened transverse arches, between which rose small domes on pendentives. The tunnel vaults in the middle aisle continue in the side aisles, while the low arches between the piers become side arches of the small domes lying in





the side aisle behind them.

If the column as a support of the clearstory enters into its ancient rights, then it also receives the antique entablature block between capital and impost of arch, as in the two Basilicas of Brunellesco in Florence, where it is sought to make a good intermediate form of the impoverished type introduced by the Late Roman and mediaeval art. Above the arch on the columns, the wall surfaces in the Florentine buildings mentioned remained without further subdivision; they were only animated by the tall windows. (Fig. 458).

But in porticoes and courts the detached columns were omitted, and these columns in pairs occurred, and the like change was perfected in the supports of the middle aisle, where this was also followed by the innovation introduced by Alessi. (Compare the beautiful 3-aisled Church of S. Siro in Genoa with a series of chapels; the columns there stand on a common base; the shafts are monolithic and of white marble; the antique entablature borne by them consists only of an architrave divided into two bands with a cornice above it; angels' heads with wings and scroll ornaments adorn the longer sides of the architrave).

Combined in fours, standing on a common pedestal and first receiving a complete antique entablature, we regard the columns in S. Giorgio dei Genovesi in Palermo (Fig. 459) as supports of the middle aisle.

The Florentine basilicas were satisfied to show the polished sandstone of the locality without disguise for all architectural members, to cover the wall surfaces with white plaster, and to leave this as the only decoration. The Genoese and the Venetians did otherwise, and especially the Northern Italians in contrast to their kindred in the South, who demanded color and made the greatest sacrifices for monumental polychromy. How far this went is eloquently evidenced by the walls and ceiling of the single-aisled Sistine Chapel in Rome. (Figs. 460, 461). First were tapestry patterns separated by pilasters as the lower zone of the wall, then a second with paintings from sacred history, above being the clearstory with the slender round-headed windows, on the right and left



of these being the solemn forms of the church fathers in niches, then the lunettes and the ceiling vault intersected by compartments never again equalled, not to mention the unsurpassed subdivision and the magnificent paintings of Michelangelo and his "Last Judgement" on the altar wall! Who can resist the charm of such an interior, consecrated by deity and by art? Here must one say immediately on beholding it; "Stop, thou art so beautiful,"--- and so sublime likewise!

### 311. Floors.

In the best period, men refused in churches the luxury of rich floors, whose splendor attracted the eye from the art forms of the building. A covering of marble slabs in two or three different colors was considered least disturbing and as sufficient. In the Cathedrals of Siena and Lucca inlaid figure representations were executed in marble of different colors, bordered by interwoven bands and a rich border with dolphins, whose arrangement is reproduced in Figs. 461, 462. Domenico di Nicolo (1423), Beccafumi, and other artists were entrusted with the execution; black, white, and red marbles were employed therefor. The originals are now mostly replaced by copies or covered by board floors; the removed original pieces were preserved in the Opere del Duomo at Siena.

Where mosaic floors were employed in earlier works, these repeated the well known ornaments of the Early Christian period and of the style of the Cosmati. (Sistine Chapel; Tomb Chapel of Cardinal of Portugal in S. Miniato; Palace Chapel in Palace Rucellai in Florence). Extensive use is made of glazed colored tiles in the South, especially in Naples. Noteworthy works are still preserved in S. Giacomo and in some chapels of S. Petronio in Bologna, of the period of 1459-87, 464 in Venice (1510), Parma (1471-82), Padua (1491), in the Sacristy of Loreto, a floor of beautiful Sienese work with grotesque ornaments (1500-40), in the Sacristy of S. Pietro in Perugia, one of 1563, and in Naples one of 1440.





## Chapter 32. Examples of important Single-aisled and Basilican Churches.

Brief historical data and notes on the forms and structure of some important churches of this kind may further complete the statements in the preceding chapters. On account of the abundance of materials, the enumeration must be limited to but a few examples of the different phases of the Renaissance style.

*Note 262. Reproduction from Letarouilly and Simil. Le Vatican et la Basilique de Sanct Pierre de Rome. Vol. 2. Paris. 1882. Plates 19, 20.*

### 312. Badia near Fiesole.

1. The pediment facade of the Badia near Fiesole, veneered with white and green (Verdo di Prato) marble, is indeed the work of the Protorenaissance in Tuscany.

### 313. S. Apostoli in Florence.

2. Arcades of S. Apostoli in Florence, built about 1200, with beautiful Composite capitals and delicate antique-like archivolt members; side aisle vaulted.

### 314. S. Miniato near Florence.

3. S. Miniato near Florence (1207), where the form of the 3-aisled basilica has attained a "latest and highest inspiration;" The columns bordering the middle aisle are in part antique, as well as some of the 28 little columns, that support the vault of the crypt. The so-called visible roof trusses were painted (now restored); the apse is adorned by a mosaic; (1297, also restored); "Christ between the Holy Virgin and S. Miniatos;" the 5 windows of the choir wall are closed by transparent marble slabs. The dignified facade is veneered with white and greenish marble, whose mosaics are mostly of the 13th century and are in great part restored. The Church contains true pearls of the minor arts of the Italian Renaissance in the ciborium-altar, in the ambos, and especially in the sepulchral chapel with the Tomb of the Cardinal of Portugal. (d. 1459).

### 315. Baptistery in Florence.

4. But the most important building is and remains the Baptistery in Florence, built in 1150. In the form of the interior derived from the Pantheon in Rome, but excelling this in



structural respects in the mode of vaulting and the use of lesser wall masses. The octagonal building is veneered with the same materials, as the buildings previously mentioned; the walls enclosing the pointed dome extend higher than the springing of the vault and are covered by a stone hip roof of low rise, so that the dome does not appear externally.

b. Transition Style and Early Renaissance.

316. S. M. della Catena in Palermo.

5. S. M. della Catena in Palermo, built anew on the site of an old church toward the end of the 15<sup>th</sup> century,<sup>263</sup> entirely constructed of ashlar, in part exhibits a rather wonderful mixture of dying Gothic and of germinating Renaissance. (See plan in Fig. 402 and interior in Fig. 6). The latter is well restored and is notable for the elevated position of the aisle floor of the Church, up to which leads a bilateral flight of free steps. Of special interest is the portico with its depressed arches and its members, which challenge comparison with allied phases of the style.

*Note 263. Hittorf assumes the time from 1391 to 1400.*

317. Portico in Arezzo.

At the little Church S. M. della Grazie in Arezzo, the Early Renaissance proposes a disproportionately large structure as a portico, that exceeds about three-fold the single-aisled building, while at S. M. della Catena this is not equal to the end of the Church. On the contrary, it exhibits in respect to form perfectly beautiful details and in regard to construction a notable execution of the strongly projecting stone main cornice. (Fig. 465).

318. S. M. in Domnica in Rome.

The High Renaissance calls the portico extending beyond the width of the three aisles and treats it more as affording shelter. Leo X had one such built in 1566 before the Church S. M. in Domnica or della Navicella in Rome, apparently by Raphael, and whose form is given in Fig. 466.

319. Sapienza in Naples,<sup>264</sup>

In the Sapienza in Naples, the Late Renaissance returns to the ground idea of the Transition style; Fanzaga (1591-1678) provided here in the 17<sup>th</sup> century one of the most beautiful





porticoes for a Church of minor value. About 250 years lie between these four different comprehensions of the same problem; at first showing limitation, then breathing freedom and release, later filled with lofty earnestness and finally rejoicing loudly at the end!

*Note 264. See illustration in Max Nohl's Tagebuch einer Italienischen Reise. Stuttgart. 1866. p. 229 and Fig. 396, p. 411.*

### 320. Cathedral in Como.

6. The Cathedral in Como is a 3-aisled basilican design, a Latin cross with dome over the intersection and polygonal endings of the choir and transepts, without tower or portico. (Fig. 467). It was begun in Gothic and completed in Barocco, and in the interior and on the exterior was entirely constructed of white marble from the quarry of Musso sul Lago di Como. On a stone placed on the exterior of the choir is the inscription, that the building was begun in 1396 and that the first foundation stone of the choir was set in 1513. The work was carried on without interruption till 1665, and only the construction of the dome remained, which was begun in 1730 and finished in 1744 with an expenditure of 243,655 liras. The main altar was restored in Rome in 1728, and thus we do not have to do with a uniform work, whose front has remained Gothic. The inscription tablet on the building is supported by cupids and adorned by a coat of arms and chimeras, and it reads:-

Cum . hoc . Templum . vetustate . con  
fectum . esset . a . populo . comensi  
Renovari . ceptum . est . MCCCCLXXXVI .

Hujus . verso . posterioris . partis . jacta . sunt  
Fundamenta . MDXIII . XXII . Decembris .

Frontes . et . later . jam . opere . perfecto .

Thomas de Rodaris . faciebat .

On November 18, 1487, was first mentioned the new model for the choir, perhaps based on a sketch by Bramante, and on March 15, 1510, the site first became possible, while according to the preceding inscription tablet on the choir, the foundation was begun on Dec. 22, 1513.

The name of Bramante does not occur in the building records; but not being satisfied with native builders, a Milanese pupil



of Bramante, Christoforo Solari, was entrusted with the preparation of another model, that was never executed; finally the Cathedral architect approved it, and he is alone given as architect on the marble tablet.

The wooden model "delle cappelle maggiori" with the drum for the dome is preserved and in the work mentioned below, it is published as a joint work of Rodari and Solari. Santo Monti gives on Plate 9 a representation of the choir according to the model of Rodari (preserved in Museum Civico at Como), but which was not executed without change (Figs. 468, 469). It no longer pleased the later persons controlling the Cathedral structure. New designs were procured, especially said with reference to the dome. Biffi (1684) of Milan first supplied a design, that was not satisfactory. Then comes Cavallo in the series, whose work was paid for in 1688. Thereupon Fontana in Rome was summoned, who furnished a general drawing of the Cathedral with the dome and a section, which were paid for in 1688; he also examined the stability of the 4 piers. Finally in the year 1731, it was decided to begin the dome; but the citizens doubted whether the great masses of Fontana's dome could be supported by the substructure. Therefore they called Juvara again (1731), who stood in high repute as the architect and engineer of the King of Sardinia, and they had new proposals made by him, -- procedures and expenses, which might have all been spared, had the existing good model of the first architects Rodari and Solari been adhered to!

Note 265. Santo Monti. D. La Cattedrale di Como. 1897. Pl. 97.

Examining the designs of Castelli, Fontana, and of Juvara, one does not feel his heart beat more strongly and merely laments, that his ignorance and want of feeling for style frustrated the good purposes of Rodari. And as esthetics forbid, so must construction suffer, and the dome was built circular in the interior and polygonal on the exterior, in a form and dimensions differing from those of the Church, "because men would not trust or remove the foundations." The name of Vanvitelli is also mentioned with the dome, whose cooperation others will not admit. But we know so much, that the Milanese engineer Merlo remedied the defects in the external form of the dome





(1770) and that shortly before this (1769), the Milanese architect Gagliori corrected other faults. One would believe this to have occurred in the 20<sup>th</sup> century, on seeing this mistreatment of an old building by ignorant officials, architects, and conscienceless building engineers, and a misguided public opinion spoil it. Rodari, who stamped the Cathedral as one of the noblest structures of the Renaissance in Upper Italy, suffered 250 years later by the bungling corrections of his work by a Milanese engineer.

The building records, repeatedly reviewed by Monti, do not name Bramante as engaged on the building, although von Geymüller conjectures on the basis of the comparative criticism of the style, that Bramante had a hand in the game, perhaps through good advice in the form of sketches.

Portals and windows of the nave, the crowning shrines of the buttresses, the urn-bearers before the frieze of the latter, remain ~~stagnantly beautiful works and also undisputed creations~~ of Rodari.

*Note 266. See further the work mentioned in Note 260; also Meyer.*

### 321. Certosa near Pavia.

7. The Certosa near Pavia. A history and description of this extensive and stately building design would alone fill a book. As an orientation may be mentioned the little Essay of Luca Beltrami, "La Certosa di Pavia, con 70 incisioni e 9 tavole (Milan, 1895)"; also the larger work of the same talented author may be recommended, as likewise the folio work of Gaetano e Francesco Durelli, already mentioned in Note 257. Details of this grand building have been previously treated in various preceding Chapters, hence only some brief data in architectural history will be given in this connection.

The Abbey was founded by Gian Galeazzo Visconti, Count of Virtù, first Duke of Milan. The corner stone was laid on Sept. 8, 1396; Galeazzo died 6 years later (1402). Begun in Gothic, then carried on further in the new style, it was essentially completed in the year 1542. The first architect still remains unknown; the Germans Enrico Gamodia and Marco da Campione are named. But the architectural functions of Giovanni Antonio



Amadeo or Omadeo are assumed in the leadership of the works in the new style.

As further influential there are authentically mentioned:--

Benedetto Brioschi	Fratelli Mantegazza
Ettore d' Alba	Antonio da Locate
Battista e Cesare da Sesto	Francesco Piontello
Giacomo Nava	Marco
Agrate	Angelo Marini Siciliano
Andrea Fresina	Christoforo Solari,
Christoforo Romani	detto il Gobbo
Battista Gattoni	Agostino Busti
Antonio Tamaguini	detto il Bambaja
Giacomo della Porta.	

The chief building materials are white marble and granite, dark red and colored glazed bricks, the latter on the cornices, whose colored glazing is still well preserved today.

The stone sculptures of the cloisters for the period of 1450-1466 are divided by Meyer in to the following classes. <sup>281</sup>

1. Minor sculptures in the Campionesese style.
2. Dry stonecutter's work in the Transition style by Filarete and Guinoforte Solari of Florence.
3. Minor sculptures in the Early Renaissance by Amadeo and Christoforo Mantegazza. The two last mentioned executed half the sculptures of the facade; in 1473, the others were transferred to Amadeo.

The shrines crowning the buttresses are likewise works of Amadeo in 1478, as well as the terra cotta in the small and the great cloisters.

### 322. Chapel Colleoni in Bergamo.

2. To master Giovanni Antonio Amadeo is likewise due the Chapel Colleoni in Bergamo, begun in 1470, which suffers somewhat by the variegation and overloading of the entrance facade. The surfaces of the facade are covered by small slabs of black, white, and red color, that are set diagonally and produce the well known shaded die pattern; the pilasters are enclosed by blackish-gray marble, the medallions likewise, while the sculptures themselves and the decorated panels are wrought from red Veronese marble. The little window pilasters of the upper story are entirely of white marble; for the little columns below





and the candelabras, the materials again alternate in black, white, and red colors, so that the two outermost are black, the two next are white, and the two innermost are red; gilding must also have originally contributed to enrich them. Very charming are the sculptured works in the interior, and first is the entirely naturalistic vine ornamentation on the pilasters at the choir.

A very interesting and earnest work in the Chapel is likewise the Tomb of Medea, the daughter of Bartolommeo Colleoni, in white marble, on which the architect has immortalized himself by the inscription:--

"Jovanes . Antonius . DE . AMADEIS . fecit . hoc . opus."

Thus we read here according to the writing, "Amadeo" instead of "Omadeo."

### 323. Cathedral in Sebenico.

9. According to the "Cronaca dalla Casa Veranzio", the Cathedral in Sebenico was commenced in April 9, 1481, in the Gothic style as a 3-aisled basilica with transepts, a dome over the intersection and 3 choir niches. The architect is named as the Venetian Antonio, formerly Pietro Paolo, who according to <sup>267</sup>Notes belonged to the artist family of Massegge, and who was already occupied on the Church dei Frari in Venice. But already after 10 years, this master was sent away "on account of faults and defects that he had made on the building," and a master "Georgius Mathei Dalmaticus" was chosen, who is also called master Orsini da Montecroscio, else otherwise known by works in Ancona, Spalato, and Ragusa, in which last place he conducted the work of restoring the Palace dei Fattori according to Michelozzo's advice. He was first employed for six years by the contract of June 22, 1441, but this was extended 10 years further in 1446. In 1470, we find master Orsini in Rome for a short time; he died in Sebenico in 1475. He completed during this period the Gothic portion of the Cathedral and changed it into the system of the Early Renaissance, i.e., <sup>474</sup>he finished the ground plan in its entire extent, the side aisles with the pointed arcades and vaults, as well as the remarkable roof and the entire structure of the choir.

Note 267. In *Geschichte der Baukunst und Bildhauerei Venedigs*. Leipzig. 1859. Vol. 1. p. 243.



On the angle pier beside the Northern apse is a stone, that bears in Gothic small letters the words:--

"Hoc . opus . cu . arum . fecit . magister . Georgius . mathei . dalmaticus."

The clearstory, transepts, and dome were built after the death of Orsini.

After him came the third architect, Nicolo di Giovanni Fierontino, known by works in Trau and Spalato. He was employed on June 1, 1477, at a yearly salary of 120 golden ducats, which he also received until 1517. Under him were the transepts with the high choir, the galleries, and the stone roofs over the apses were completed. In his place then came Bartolomeo, formerly Giacomo da Mestre; he was followed by his son Giacomo, who was engaged till 1535. A Giovanni Masticerich, "lapicida" from Zara, put the last touches on the building, whose completion is stated by the inscription in the interior:--

"Praesule suo Lucio, Oritto Praetore Peractum tercentum et septem lustris addentibus annum."

Hence 307 lustrae (or 5 years each) and one additional year gives 1536; the building period therefore lasted 114 years.

The material is a white and exceedingly fine limestone, which is quarried in the vicinity, the workmanship is perfected, and the treatment of forms is equally so. The details of the construction have already been described, and a representation of the entire building is given in Figs. 431, 432. The little baptismal chapel is to be especially mentioned, its ceiling consisting of a single, richly ornamented block of stone.

The beautiful structure showed in the beginning of the last century great injuries, and it was therefore subjected to a thorough restoration. The entire dome was then taken down and rebuilt anew; then were the stone roofs of the aisles renewed, as well as four chapels and a column in the arcades, and a large number of pieces of the cornice were renewed. The Austrian government skilfully carried on this work until 1854 in the most complete manner.

Note 268. See Graus, J. *Der Dom zu Sebenico. Kirchenschmuck. Jahrgang 27 (1866), Nos. 1 to 5.*





## 324. Churches of Alberti.

10. Alberti erected the marble temple of S. Francesco in Rimini, whose architectural elements are taken from the antique, as a rebuilding of a Gothic Franciscan Church, whose external walls and pointed windows were spared by him. Independently of the old building, he covered the entire original structure with a marble enclosure, permitted the pointed windows of the side chapels to remain in the interior and merely changed their details. He extended along the longer sides of the exterior a round-arched arcade, in whose niches were built sarcophagi. He made the front facade entirely free without attention to the earlier one, only retaining the clear dimensions of the entrance doorway. In the frieze over the lower colonnade stands the inscription:--

"Sigismundus Pandulfus Malatesta Pan. V. R. Gratias. 1450." The facade remains unfinished. How this must have been intended is given by coins of Matteo de' Pasti, which likewise show that a dome was planned for the building, for which the corner stone of the new portion was laid on October 31, 1446, under the benediction of the Bishop of Rimini Bartolomeo Malatesta. A white Istrian limestone served as the building material; reddish Veronese marble was employed for the balustrade in the interior, but the tympanum of the portal was composed of marbles of different colors.

Alberti furnished a model, which he supplemented by drawings; he had nothing to do with the execution.

The development of the interior leaves something to be desired; the subdivision of the walls over the impost cap by closely set pilasters is not a very talented adjunct; the limestone work exhibits the idea peculiar to the Early Renaissance, of the addition of coloring with heraldic blue and gold; as on the Palace in Urbino, on various Tombs in Rome (Araceli), and other places.

The bases of the chapel piers are of peculiar form, where instead of the lions usual elsewhere (Colleoni Monument in Bergamo, Monument of Giovanni Borromeo on Isola Bella), pairs of elephants in dark marble and woven baskets of flowers with cupids are chosen.



Note 269. Further in Yriarte, C. Rimini. Paris. 1882. Chap. 10. p. 179-252; also The Builder, 1883, Jan. 13, p. 40-42; also 1901, May 25. p. 544; especially Zeits. f. Bauw. 1893. p. 8, 205.

11. S. Andrea in Mantua is a single-aisled basilica with side chapels along nave and transepts, come over the intersection and semicircular choir apse (Fig. 470) with a rectangular projection, emphasizing in general the Latin cross.

Alberti was in Mantua after 1459, and after Cardinal Francesco Gonzaga, son of Duke Lodovico, had decided on the new building, he was entrusted in 1472 with its design and supervision. The execution was cared for by Luca Fancelli. A beginning was made in February of the year mentioned by tearing down the old Church S. Andrea, but the bell-tower finished in 1412 was permitted to remain. The previously mentioned superintendent Fancelli received in April, 1472, the final drawings of Alberti, who died in Rome the same year at the age of 68 years. The building was carried on slowly, and Fancelli left Mantua in 1487 on account of lack of work. The work on the building was again resumed only in 1490 and about 1500, the vestibule and the longitudinal aisle were completed; then the building remained quiet from 1550, and it was only in 1597, that the transepts and choir were commenced with abundant means, only at the express command of the Duke, and after the drawings of Alberti, which were thus preserved 100 years later.

Viani from Cremona probably completed the transepts and choir about the year 1600. Then the building again rested until 1696. As at the erection of the Cathedral in Como, the feeling for the delicate forms of the Early Renaissance was lost meanwhile; that previously done was little esteemed, and the originally planned dome of Alberti was also no longer desired. The architect Torre was called from Bologna, who desired to rebuild everything in the Barocco style. But a favoring fate permitted a delay from 1710 to 1731; but we then learn of the following year, that after the still lacking two arches at the intersection and the substructure of the dome were undertaken on October 15, 1715, Cavaliere Filippo Juvara from Messina, Architect of his Majesty Sarda, was entrusted with the comple-





completion of the building. In 1780 the pendentives and the great main cornice beneath the drum were finished, and the dome was roughly completed in 1763 and covered in 1782.

Disintegration of some marble members and of the stucco of the Western vestibule made necessary a restoration in the year 1832, whereby the remains of the then preserved facade paintings of Mantegna and his sons were unfortunately destroyed. The stucco was removed and freshly replaced, the painted coffers being executed in sculpture. The marble architraves of the smaller doors and the plinths of the four great pilasters were renewed in marble, as well as the bases, which were previously of terra cotta. The capitals of the great pilasters and those of the internal angles, which were modelled in lime mortar, were likewise replaced by those of marble: the internal walls were also covered with marble to the height of 5.41 ft., and lastly all the remainder was coated with light gray and yellowish colors in milk, concealing likewise the members of red terra cotta, but which now (October, 1901) again appear in their original color. These embellishments were continued till the year 1876, and now the guide books speak of a white marble facade! What a different effect must the building have had in genuine materials by Alberti and and with the decoration by the pictures of Mantegna!

The details of the close portions of the Church agree with those of S. Francesco in Rimini and also with those of Palace Rucellai in Florence, so that no doubt can exist concerning Alberti's participation in this. It may be added in reference to the construction, that in the execution all visible anchoring with iron is avoided, and that the roof covering of tiles rests directly on the plane surfaces of the great tunnel vaults, entirely according to the antique custom. Walls and vaults are built of bricks and all repeated members, cornices, panels of pilasters, are of plainly shaped excellent terra cotta. The plain surfaces are plastered, the capitals of the internal columns, the coffers, the mouldings of the great dome, and the ribs of the vaults, are of stucco. The interior is richly painted and still further heightened by gilding. <sup>270</sup>

*Note 270. See the thorough and carefully written history*



of the building by E. Ritscher in *Zeits. f. Bauw.* 1899. v.1, 181.

### 325. Churches of Brunellesco.

12. Filippo Brunellesco received in 1433 the commission for building anew S. Spirito in Florence; but this soon met with the fate of all heretofore treated; it came to a stand. At the death of the master, the ground-plan had been built in its main lines, and the model of the building had been prepared. Antonio Manetti was entrusted with the further erection of the building, so that the chief building period probably fell in the time from 1470 to 1480, and the Church might indeed be consecrated in 1481, but it was not yet complete in all its parts. Besides Manetti, Villanesi also names a Giovanni Variano, called Lo Scorcaccia, who was employed as foreman mason on the building from 1475 to 1490. The bell tower was begun by Baccio d' Agnolo (d. 1543) and completed after his design under Cosimo I.

Brunellesco is responsible for the plan, the nave basilica of cross-shaped plan with the emphasizing of the intersection and the duplex ending of the cross, but he is not so for all details. The middle aisle has a horizontal wooden ceiling; the side aisles are spanned by spherical vaults and the chapels are covered by niche vaults. The dome over the intersection has a low arch without windows, over which rises the so-called "helix vault" with ribs, small windows and a lantern at the apex. Beneath the dome stands the high altar, as in S. M. del Fiore at Florence and in S. Pietro's Cathedral at Rome.

The narrow windows of the side chapels, which are half or entirely walled up on account of altars, exhibit in horizontal section a treatment harmonizing with their semicircular form, from which the originally semicircular external form of the chapel walls may also be deduced, and these show that the straight course of the walls there, is a later addition. There now appear triangular spaces in the masonry, between the walls of the chapels. What the master intended<sup>271</sup> is not known, yet it can scarcely be what now exists there.

*Note 271. An allied design occurs on this side of the Alps in the Church of S. Michael in Munich; the architect has there attempted a solution, by which the internal form of the chapels*





is also shown externally and yet a direct continuation of the plinth and drip course is possible. (Fig. 471). The attempt well merits mention, but it is scarcely Italian.

In the interior, the columns are monolithic and are polished, like the entire internal work in cut stone, set with tolerably fine joints in white lime mortar. The treatment of the angle piers at the intersection, that form the supports for the four arches of the middle aisle and the dome, is borrowed from the precedents in S. M. Novella and S. Croce in Florence. Adjoining the high piers of the middle aisle are the lower ones of the side aisles, so that the arches of the latter fall considerably lower than those of the middle aisle; they therefore have to sustain the thrust of an arch and vault from two sides with another opposed to the former, though at a different height.

In S. M. Novella, the square nucleus of the pier has a side of 3.44 ft. with a projection of 1.15 ft. on two sides, and on two others are an engaged half column with two moldings. The pier at the intersection in S. Croce is octagonal with a diameter of 4.92 ft. In both churches, the first of which is vaulted, no deformations are to be found, or at least none worthy of mention, while the same arrangement in Venice (see Fig. 31a), continuous cracks may be traced. The nucleus form in S. Spirito has only a side of 3.80 ft. with projecting half columns on two sides, the different pieces being mostly executed as through stones. The vaults are constructed without visible anchoring; but all the four angle piers and the adjoining arches are therefore accordingly much deformed. All vaults of the side aisles likewise show larger diagonal cracks, frequently beside each other. Many injuries may be referred to the fact, that the arches rest on one side on masonry with many joints, on the other upon ashlar with few joints; both supports must settle unequally and the consequences thereof be found in the arches. Thus the deformations in the arches of the ambulatory are very great, especially on the right of the high altar, and the dome also exhibits small cracks in the masonry of the drum, that extend to the arches.

13. S. Lorenzo in Florence was begun in the first decades



of the 15th century as a new structure of the Tuscan mediaeval type. When the work was entrusted to him, Brunellesco found the ground-plan existing in the foundations of the transepts and choir: the nave basilica and transepts were therefore not exclusively the product of his own free will. Especially as concerning the form of the transverse aisle, S. Croce and S. M. Novella in Florence served as models; but the nave was created entirely anew by the master.

Antonio Manetti also constructed this building and brought the interior to an end in 1460; from him likewise comes the existing form of the dome over the intersection, since the transverse structure and the intersection were still unfinished at Brunellesco's death. He also left the pediment facade incomplete, which he had designed to be simple.

As in S. Spirito, the middle aisle is furnished with a horizontal wooden ceiling, now colored white and gold, the side aisles are covered by spherical vaults, the niches of the chapels by tunnel vaults, and the intersection by a hemisphere without a drum, but with a lantern at the apex.

The four supporting intersection piers have nucleuses with a side of but 2.95 ft. with a projection of 0.66 ft. and 1.12 to 1.67 ft. in height of the courses of masonry. The stone-cutter's work is also polished here; it is now unfortunately coated with a light-gray wash. The columns are monolithic and the vaults are executed without visible anchoring. In the arches of the side aisles resting on the intersection piers, the keystones are not all in order; all compartments of the vaults of the side aisles are frequently cracked diagonally, like those in S. Spirito. The material, here as there, is Tuscan light-grayish-green sandstone; the surfaces of the walls and vaults are plastered white.

### 326. Churches of Bramante.

14. At S. Satiro in Milan, begun by Guinoforte Solari, the continuation of the work is sometimes ascribed to Bramante, sometimes to Bramantino, but the sacristy is certainly due to the great native of Urbino, as well as the remainder of the building.

What now appears is a 3-aisled pier basilica with a trans-





transverse aisle, dome over the intersection, and a seeming choir. The transverse and middle aisles are spanned by coffered tunnel vaults; these are subdivided into bays by strengthening ribs corresponding to the pilasters of the piers beneath. The dome has a low drum without lights, its internal hemispherical surface being adorned by coffers; a lantern crowns the apex; the enclosing walls rise above the springing and support a low pyramidal roof.

19 The side aisles are covered by cross vaults and extend along only one side of the transverse aisle, since their extension on the other side was impossible on account of the limits of the site. This limitation also led to the erection of the apparent choir, whose effect does not fail, so long as one moves along the middle axis of the building and his eye is not sensitive to a defect in the lines of the internal cornice, this makes itself felt the more unpleasantly, the more one leaves the middle axis or approaches the choir. Seen from the transverse aisle, the whole becomes laughable and is only "distinguished" for the ignorant; the beautiful appearance is not preserved, and what was intended is not attained. The building period is given till 1495; the consecration is given as finished in 1523.<sup>272</sup>

*Note 272. A good representation is found in Cassina, A. -- For the sacristy in S. Satiro and the choir of S. M. della Grazie in Milan, see Art. 332.*

15. Church S. Casa in Loreto comes into consideration here, not only since Bramante is mentioned in reference to the improvements in the dome, but still more because he was the creator of that wonderful marble covering of the House of the Virgin beneath the dome, which Andrea Sansovino (1513-29), Girolamo Lombardi, Tribolo, Bandinelli, and others, decorated by statues and reliefs, and Girolamo Lombardi furnished with bronze doors.<sup>273</sup>

*Note 273. See a description of this architectural work in Zeits. f. Bild. Kunst. 1871. p. 160. -- The sketch plan there given is entirely incorrect, for example, the longitudinal aisle being one bay too short.*



## 327. Churches in Milan, Genoa, Florence, and Venice.

16. Of Milanese churches, there are to be mentioned in accordance with the period of their origination:--

S. M. presso S. Celso (1490), built by Giovanni Dolcebuono, with beautiful fore-court and rich facade by Alberti. A 3-aisled pier basilica with 9 external sides or with 5 square and 4 triangular apses. The choir itself forms a half octagon in its ground-plan.<sup>274</sup>

*Note 274. See the publication in Cassina. Pls. 19-24, in whose text Bramante is also designated as creator of the vestibule.*

17. S. Vittore, on account of its splendid Barocco internal decoration by Alessi. (1560).

18. S. Fedele, built after Pellegrini's plan (1569) as a Jesuit church, completed by Martino Bassi.<sup>275</sup>

*Note 275. Published by the same.*

19. There is to be mentioned in Genoa the 3-aisled basilica of S. Annunziata (1587), built by Giacomo della Porta, on account of its extremely luxuriant interior with works in red marble inserted in the walls.

20. The facade of S. Trinita in Florence by Buontalenti.

21. S. Salvatore in Venice on account of its interesting Barocco facade of the year 1628, a building begun by Giorgio Spavento and completed by Tullio Lombardo in 1534.

22. Of Palladio's churches in Venice are to be mentioned:--

S. Giorgio Maggiore, begun in 1560, with the facade completed by Scamozzi in 1575, also;

23. Church S. Redentore with an interior in a single aisle, built in 1576.

## 328. Roman Barocco Churches.

Of Roman churches of the Late period may be noted:--

24. Church Gesù, the chief church of the Jesuits, built at the order of Cardinal Barnese in 1568-76 by Vignola and Giacomo della Porta, exhibiting one of the most splendid and richest interiors of Rome. Its nave was furnished with costly marble paneling in 1860 by Prince Torlonia.

25. S. Andrea della Valle, begun in 1591 by P. Olivieri and finished by Carlo Maderna, with a rich facade after the design





of Carlo Reinaldi (1665). Especially worthy of consideration on account of the bronze copies of the Pieta, of the Lea, and the Rachel of Michelangelo, and of the charming bronze candelabra in Chapel Strozzi.

26. S. Ignazio, begun at the cost of Cardinal Ludovisi and completed in 1675; planned by Father Gussi with a facade by Algardi.

The interior of the building is famous for the paintings of Father Pozzo with their singular perspective, where painted architecture seeks to surpass the monumental. We see the compositions executed with extreme and unexcelled skilfulness and a distinguished sense of color, -- but it always remains fatal to them, that they have a correct effect only from a single point, which is therefore crudently marked by a circular marble disk in the middle of the apsidal aisle. Extending above it, the beautiful screen ends, and the undertaking partakes of the fate of all similar perspective follies. A pity for so much talent and ability misplaced!

### Chapter 33. Central Designs.

"The central building is the last in the domain of absolute architectural forms as the Greek temple is the first. Its possibilities have long been unexhausted, and there may be intervening periods like the 19 th century (also the beginning of the 20 th ?), which must again absorb the lessons of the 13 th, -- this great problem will ever appear anew, wherein the attempts of the Renaissance will enter as indispensable preliminary steps, solemn in their right. -- But the Renaissance has indeed developed the highest church architectural form, the central building, to nearly absolute perfection, superior to everything Gothic, and has left it as a legacy to a future "religiosity."

Burckhardt, J. Geschichte der Renaissance. p. 97.  
Stuttgart. 1878.

### 329. Central Buildings.

Important for the acceptance of the central building as an ecclesiastical form of structure was in Italy the existence of so many antique circular and polygonal edifices, and also the



constant sympathy with the Orient, which found sufficient incitement in S. Sophia, to mention but one example of high rank. The "mythical fame" enjoyed by the Pantheon in Rome and by S. Lorenzo in Milan, the admiration of other and better preserved central structures of circular or polygonal form, like the mighty domes of the Baths in Rome (Baths of Caracalla, the so-called *Minerva Medica*) and near Naples (Baiae), as well as the Early Christian buildings in Ravenna, kept alive first in Roman architecture the use of the central building, caused experiments in the period of the Protorenaissance (Baptistery in Florence), and then in the Gothic middle ages, even if these remained only on paper or in the model (Florence, Bologna, Pavia, Loreto); their construction was then taken up by the increasing Renaissance.

The custom of regarding the baptisteries as central buildings and of producing this architectural expression further contributed to not permitting the idea to be lost in the circular structures, whereby likewise the art of vaulting large interiors did not fall into oblivion; for no central building was to be conceived without a vaulted ceiling.

The accenting of the intersection of the mediaeval cathedral in Italy, when accepting the Latin cross as the ground form, by a dome had previously been frequently conceived; but to consider and to execute this as a dominating entirety, as an architectural focus of an architectural design remains the undisputed merit of oriental Christian architecture and of its progressive successor, the Italian Renaissance!

"Absolute unity and symmetry, perfectly beautiful subdivision and enhancement of the interior, harmonious development in both exterior and interior without useless facades and the noblest arrangement of the lighting," -- these are the characteristics and peculiarities of these domical structures, which cannot be more strikingly expressed in words, than Burckhardt has already done.

### 330. Ground Form.

The arrangement for a circular or polygonal interior remains the simplest solution for the structure, but if the altar be not placed at the centre of the plan, its unity is disturbed,





when a special addition must be made for the altar. (Compare Madonna di Campagna near Verona, S. Maria at Busto Arsizio, Umiltà in Pistoja, S. Sebastiano in Milan).

These inconveniences and doubts disappear with the adoption of the Greek cross plan with four arms of equal length as the ground form, which consequently became the prevailing one.

But the great structural undertakings in dome construction do not commence with the realization of the ideal; these are works of improvement in a new form of those taken as a basis by others; they are works preliminary to the future, but not yet existing expressions of power.

### 331. Beginnings.

On sacristies and chapels, the Early Renaissance made its first independent and original attempts in actual buildings, structures of small volume and little dimensions, but therefore the more worthy of appreciation and more beautiful in details, in their design and execution.

Here is to be counted the Sacristy of S. Spirito at Florence with octagonal ground-plan: two tiers of pilasters above each other as a decoration of the wall surfaces, where the pilasters are set back from the angles (leaving free the angles of the polygon), over it being a cloister vault with lunettes and a small lantern extending to the attic. Giuliano da Sangallo is given as the maker of the plan and model, Cronaca as the architect, who completed the building, and Sansovino as the master for the beautiful details.

Further the Sacristy of S. Lorenzo there, which came from the hand of Brunellesco about 70 years earlier, the so-called Sacristy Vecchia (1425), that possesses a so-called melon vault with round windows and is without an intervening drum, above pendentives and a square ground-plan.

More impressingly treated is the attempt in the Pazzi Chapel in Florence, of which Brunellesco was likewise the originator. (1420). Not a central structure in the proper meaning of the term, the Chapel exhibits an oblong ground-plan with vestibule and choir, where the principal axis is not placed lengthwise, but according to the narrower side of the building, the liturgic axis thus lying in the direction of the latter. The arch-



architectural subdivision of the ceiling justifies this procedure, the rectangular interior being subdivided into three parts, being indeed separated by two semicircular transverse arches into a square central and two narrow side bays.

443 The two latter are executed as tunnel vaults, the central bay is a melon vault on pendentives, with ribs and round windows, crowned at top by a lantern. Thus the dome dominates the entire design; the tunnel vaults on the right and left are its accessories, and between them and on the middle axis of the dome opens the choir, square in plan, which is again spanned by a spherical vault. Entrance on the liturgic axis is permitted by the beautiful great entrance doorway with its precious carved leaves, at the rear of the charming vaulted portico, whose middle bay is likewise distinguished by a dome, whose ornamentation by colored majolica work from the atelier of Robbia has already been mentioned. (Art. 37).

As a work of Brunellesco may also be mentioned the truly central design of S. M. degli Angeli in Florence (1451), where the span of the dome was planned to be 51.82 ft., with the adoption of a ground-plan internally octagonal and externally 16-sided.

The ground form of the Greek cross is found in the purest way in the construction of S. M. delle Carceri in Prato by Giuliano da Sangallo (1485). Surrounded by four tunnel vaults of equal dimensions, four transverse arches receive on pendentives a closed drum subdivided in panels and surrounded by a balustrade, above which rises a melon vault with ribs and round windows, and with a lantern at its apex. The drum appears externally but not the vaulted form of the dome itself, which enjoys yet the addition of the low pyramidal roof of Upper Italy. (Fig. 472).<sup>277</sup> This is likewise the case with the dome roof of Chapel Pazzi at Florence, and in curved form on S. Maria at Busto Arsizio. (Fig. 134).

Note 276. *Reproduction from Oettingen, W. von. Antonio Averlino Filarete's Tractat Über die Baukunst. Vienna. 1890. p. 465. Fig. 7.*

Note 277. *Also see Zeits. f. Bauw. 1868. Pls. 62, 63.*

The domical roof (protecting roof) in vaulted form appears in early designs only in those of the dome of S. Francesco in





Rimini designed by L. B. Alberti and in those of the Cathedral for Bergamo by Filarete (Fig. 473).

484 332. Later Buildings.

The pure Greek cross form in the interior, though not on the exterior, is shown by the beautiful central Church of Madonna di S. Biagio in Montebelluna, which possesses the boldly subdivided bell towers at right and left of the front arm of the cross, and not those like minarets as in the drawing of Filarete, -- a work of the elder Antonio da Sangallo (1518-37), and one of the most perfect central church buildings of the High Renaissance (Fig. 474). Not only does the drum with windows appear externally, but likewise the calotte form of the dome with the lantern. The high cylindrical drum is subdivided by closely set Corinthian pilasters, that have a continuation in the form of plain ribs on the vaulted surface of the roof. The window openings in the drum are made in the interior of the same height as on the exterior; the internal main cornice of the dome also is below the external one. Yet the internal and external window sills are connected together by splayings sloping inward, which makes possible for the observer a view of the entire light opening, but which cannot strictly be termed an organic solution. The same arrangement with the sloping splayings between the internal and external windows of the dome has likewise been adopted by the architect of S. Fedele in Milan.

Here should also be mentioned S. Giovanni Crisostomo (1483) by Moro Lombardo in Venice, as well as the "extravagant masterpiece" of S. M. dei Miracoli in Brescia, with its alternation of great and small domes and little tunnel vaults, -- with 4 piers in the square ground-plan and an elongated choir addition. (Compare Fig. 108).

Another group of central structures of medium size is formed by the churches of Upper Italy executed by Bramante and contemporary masters, a great number of which have been made known by Strack in his work mentioned below.<sup>278</sup> They are designed internally sometimes circular, sometimes polygonal, with domes resting on pendentives or spanned by cloister vaults, but all are provided with a crowning lantern.



Note 278. Strack, F. *Die Central- und Kuppelkirchen der Renaissance in Italien*. Berlin. 1882.

As a first example may here be named the choir building of S. M. della Croce in Milan, shown in ground plan, with a drum animated by small double windows and round windows in the 485 domical vaulting, that shows a span of 59.04 ft. (Fig. 475). Then the externally circular and internally octagonal octo structure of S. M. della Croce near Crema by Battagli (1490): further the dome of the choir of S. Maria near Saronno on pendentives over a square interior, at first with an internally 12-sided drum animated by niches, above which are round-arched, lunettes with small round windows, over these being the hemispherical plain and painted dome (Fig. 477). Likewise must be mentioned the Incoronata of Lodi (Fig. 478), a structure constructed internally and externally octagonal, covered by a circular vault and crowned by a lantern, furnished with a triple-arched vestibule between two bell towers, one of which is only carried to one-third its intended height. Further to be named are:-- S. Maria at Busto Arsizio, S. M. Coronata at Pavia, and especially the beautiful sacristy building of S. Satiro in Milan with its octagonal ground form, four semicircular niches, upper arcade, cloister vaults with round windows in the surfaces of the vaults and a taller lantern at the ap- 487 ex, -- a decorative masterpiece by Bramante with terra cotta busts and reliefs by Caradosso (Fig. 479; decorative treatment of one side of the octagon). The interior of this little building appears to have met with the fate of S. Andrea in Mantua; it is now coated with light yellow, bronze-green, and gray washes, but it was originally left in the red color of the terra cottas, perhaps with the use of blue color and gilding.

These domed structures likewise do not show the vaulting externally: this is concealed behind walls extended higher, mostly surrounded and effectively animated by galleries in mediaeval form. (See Figs 475-478).

Plain and simple external surfaces are shown by the high enclosing walls of the charming creation of Sannicelli, the Chapel Pellegrini in S. Bernardino at Verona, where the dome





likewise again disappears beneath the protecting hip roof, but whereby the lantern appears so much more effectively. (Fig. 480).

A true calotte dome with lantern and a cylinder admitting light appears in the Madonna della Consolazione at Todi. The plan shows a square central space with a semicircular choir ending and 3 polygonal apses, thus being the most strongly expressed central design. But the form of the vault of the dome appears on the exterior; likewise at the four apses are the quarter-spherical vaults externally shown; they abut against the square substructure of the main dome, which was much strengthened on account of the thrust of the walls of the apses at its angles. A balustrade extends around and forms the proper termination of this part of the building, above which rises the dome. The forms of the details of the lower parts of the building and of the interior up to the dome indicate the 'Early Renaissance'; those of the dome are on the contrary somewhat Barocco; but nevertheless the general effect is that of a single design, if one does not consider the building in detail and enters it uncritically.

It is popularly ascribed to Bramante; researches in the archives by Rossi do not prove this, for his name is not mentioned in the building records. The first notice of the building occurred in 1508, when on October 7, a payment was made to master Cola di Matteucci da Caprola, who is otherwise known as an architect of good repute and in good esteem. The work was in 1606 completed to the base of the dome, and in 1617 was the miracle-working image of the Madonna placed in the finished Church, -- after a building period lasting more than a hundred years. Many believe in the authorship of Bramante, in spite of the lack of all documentary proof for their opinion (just as for the Cathedral in Como); Rossi flatly differs for the reasons given. The negative result of the investigations does not permit an unassailable conclusion. It remains primarily a "matter of belief", which of the two is to be held as the architect of the Church.

*Note 280. See Laspeyres. Plates 68, 69. -- Likewise the beautiful domed space near the transverse aisle and choir of Church S. M. della Grazie in Milan with the rich terracotta*



ornamentation is ascribed to Bramante. Because of the recent-revived contention concerning the authorship of Bramante for the building of the Cancelleria and other palaces in Rome, which Count Domenico Gnoli introduced and continued together with Ettore Bernich, like the consolatone at Todi, it must be left to individuals to take either side of the contest, that they prefer, since former investigations have led to no acceptable final result. When by these and without any compulsory documentary materials, there is elevated sometimes a miniature painter, Gasparo Romano, sometimes a Bastiano da Bologna, instead of Bramante, further evidence must still be awaited. And we question the basis of the contention; the well known great inscription in the frieze of the third story, and a smaller one found later over the middle window of the principal story, show the dates 1495 and 1489, while Vasari says, that Bramante first came to Rome between 1499 and 1500, and that he only collaborated with other architects as an adviser. That Bramante had anything to do with the construction is made credible by Vasari; but that on this account he must have settled in Rome is in accordance with allied methods not entirely necessary; and if we assign the date of about 1500 to the change of residence, this is still no reason against an earlier occasional collaboration of the honored architect. Other things tend against the exclusion of Bramante in this case, whose statement would extend too far. (Compare *Archivio Storico dell' Arte* (Rome 1892); the Oct. and Dec. parts of *Rassegna d' Arte* for 1901, as well as the May part for 1902; further the views of Euckhardt in "*Cicerone*" (Basle edition, 1860); those of Letarouilly in the text volume of "*Édifices de Rome moderne*" (p. 219-220); Redtenbacher's in "*Architektur der Italienischen Renaissance*" (Frankfurt. 1886) p. 180; von Geymüller's in the Dec. part of *Rassegna d'Arte*, also those of Gnoli in *Revista d'Italia* for April 15, 1898, as well as Fabriczi's in the Dec. part of *Rassegna d'Arte* for 1901).

It is to be regarded as a malicious fate, that to the great Bramante are ascribed works in which he probably or actually had no part, but on the other hand it is to be lamented, that too few have been adjudged to L. B. Alberti, because he once





wrote:-- "*L'architetto per conservare rinomanza, deve dare i soli modell. -- facendoli eseguire da altri,*" on the ground of which utterance, merely the name of the builder has been connected with many works, and not always that of the talented designer.

489 Allied in the arrangement of the plan is Madonna della Steccata in Parma (Fig. 483; from Strack), but which, instead of an increased thickness of the walls at the recessed angles, shows chapels with plans externally square and internally octagonal, that extend up to the height of the semicircular apses, so that the substructure of the dome rises above the apses in the form of a Greek cross. The latter and the dome itself show without deception the same form of the vault as at Todi; by the use of the colossal order on the exterior and the interior, the architectural effect is improved; but the main dome with its rather insignificant colonnade around the drum seems too low and this permits the general effect to fall below that of Todi.

The external surfaces of the walls of the building are plastered; only the window enclosures and the cornices consist of cut stone, whereby it loses in appearance and in monumental effect. According to Vasari, the Church was built from drawings and plans of Bramante, "as men say." Other traditions state that the building was begun in 1521 (thus 7 years after Bramante's death) after drawings by the architect Francesco Vaccagnini da Torrechiara, and the building of the Church was afterwards completed only in the year 1515. The consecration by the Bishop of Parma followed in 1539; the choir was enlarged in 1680.<sup>281</sup>

*Note 281. According to Strack. p. 9 et seq.*

The ground plan of the Church Madonna di Campagna at Piacenza exhibits something in its scheme common with that of the Steccata; for here likewise with the adoption of the Greek cross, the reentrant angles have chapels; these are not enclosed, but in a bolder and freer way are open towards the central space, so that four angle piers receive the dome. The four apses end in rectangular form; the angle chapels extend to the height of the arms of the cross, terminating in small



octagonal structures. The arms of the cross and the dome show nothing of the form of the vault; they are concealed beneath low gable and hip roofs. The substructure of the dome appears externally in two stories and surrounded by galleries; windows are formed in the lower one to admit light into the interior; the upper one serves as a gallery merely to animate the exterior and to make its appearance richer.

The Church was built in brickwork between 1522 and 1528 or 1532: columns and cornices are made of cut stone. Bramante must here likewise give his name as master, but this is not proved, though no other master is mentioned in his place.

On the contrary, Bramante's authorship is guaranteed for the very smallest central building, the so-called Tempietto, which Ferdinand IV of Spain and his consort Isabella caused to be built in 1502 in the court of the Monastery of S. Pietro at Rome. Of circular ground plan with a colonnade of 16 granite Doric columns, that support an entablature with triglyph frieze and a balustrade, the dome rises in a beautiful and pure form without any other protecting roof, above a drum animated by shell niches and rectangular windows. The crowning termination is formed by an ornament composed of arms, a sphere and a cross, without providing for any lighting at the apex.

*Note 282. See Letarouilly. Vol. 3. Plate 323.*

Bramante's pupil Vittori was under the influence of Sangallo or of Cronaca during the building of the Umilta in Pistoja, which Vigarani completed internally at least, though not very happily. The pilasters are there set back from the angles of the octagon, as on the Sacristy of S. Spirito in Florence.

*Note 283. On the architectural history and the construction of the domical structure, see Durm, J. Grosskonstruktionen der Italienischen Renaissance; Kuppel der Maria dell' Umilta in Pistoja. Zeits.f.Bauw. 1902. p. 13.*

Instead of this idea or that of the broken pilaster in the angle, in other places, for example in a chapel in S. Andrea in Mantua, columns are set in the angles in a very effective way, -- (Figs. 482, 484), -- an antique (Villa Hadriana near Tivoli), and likewise a mediaeval motive. But this offered





solution stops above the main cornice, where might be expected the continuation or suggestion of the columns towards the panels of the vault. The plain bands on the groins of the vault do not continue the lower accenting of the angles in a natural way to the apex. But also peculiar here is the arrangement of horizontal rectangular windows at the base of the dome and their intersection with the surfaces of the vault. The master desired, like Giulio Romano on the portico of Palace del Te, to avoid intersecting compartments, and he rested the vaults on a projecting band supported by consoles. (Fig. 481, A and B).

The subdivision of the walls appears better, as well as the scution at the angles of the polygonal apses on the Cathedral at Como. Both on the wooden model of Rodari (Fig. 468) as well as for the actual construction (Fig. 469), there is an endeavor for a bold continuation of the angle columns in the angle ribs.

Besides the already mentioned little Chapel Pellegrini, yet others of the master Sannichio among the central and conical structures of Upper Italy play a part, like the circular Church Madonna di Gassiana near Verona (1569) and the cones of S. Giorgio in Braida at Verona.

For spaciousness, as one of the most considerable undertakings in the domain of domical architecture should be mentioned the octagonal cone of the Cathedral in Montefiascone with approximately 82 ft. span. According to Dianoux, <sup>284</sup> this dome was constructed of brickwork, over which was to be placed a second one covered with plates of copper and lead. Until the construction of this, the building was furnished with a temporary roof, which burned and destroyed the building. The restoration came into the hands of Fontana, who executed this in the fashion of his time. The thickness of the wall of the drum is 11.15 ft.; the cone is 59.04 ft. high and at a height of 25.58 ft. above its base, two iron bands are built in, <sup>493</sup> whose junctions appear on the surface of the dome. At least the angles of the octagonal sides are held by these and are thus prevented from bending outwards.

*Note 284. See Dianoux. p. 129, 130; plates 94, 97.*

Solari's domed structure of S. M. della Passione in Milan



should likewise find mention here.

From the octagonal intersection at its junction with the transverse aisle and the choir is developed a central design of the richest kind in the Cathedral of Pavia, authentically built by Gristoforo de' Rocchi, who had the control of the building in his hands from the day of laying the corner-stone (June 29, 1488) until his death in 1497. His successor was the great Cosmo or Amadeo, whom we have already known in Bergamo and in the building of the Certosa near Pavia. The wooden model of Rocchi for the structure has been preserved; Fig. 485 gives an idea of what was intended, but never completed. The grandly conceived pyramidal superstructure indeed permits the overlooking of objections, which may indeed be justly made.

A central structure, pure and free from all that could weaken its individuality, is S. M. di Carignano in Genoa, built by Alessi in 1552, represented in Fig. 486; the motive of S. Pietro in Rome is expressed therein "in an entirely free and novel arrangement," with high beauty of space in the interior. A great main dome dominates the design with square ground plan and with 4 small subordinate domes, of which merely the lanterns harmonize in the general grouping. The design was originally to have been flanked by 4 towers, but only two of these were erected in a changed form.

*Note 285. Compare Durm, J. Kuppel der S. M. da Carignano. Zeits. f. Bauw. 1902. p. 161.*

333. S. Pietro in Rome.

But the greatest work in this domain of church architecture was performed by the two best Renaissance masters, -- Bramante and Michelangelo, -- in their designs for the Cathedral of S. Pietro in Rome (Fig. 487). What Bramante desired is shown to us by his first ground plan in Fig. 488, and what Michelangelo wished, by the ground plan in Fig. 489. While Bramante indeed loses in part in details, Michelangelo expresses his ideas clearly and simply by firm, thoughtful, assured strokes, and he was more fortunate than most mortals, in that what he planned was also executed, even if he could not see it completed. A representation of the effect of the work as a central building comprising the choir and two arms of the cross is given by Fig. 490; great and peaceful in its lines and amazing in its





appearance, the dome showing the most beautiful outlines in the world! It stood effectively for 40 years as a central structure in general; for only in 1606 did Pope Paul V cause the erection of the existing unfortunate nave, -- more unfortunate for the exterior than the interior, which can never lose its noble effect, even in the elongated ground plan.

To include a history of the building of S. Pietro within the limits afforded by this volume is impossible: reference must here be made to the numerous and extensive publications of earlier times by Costaguti, Ferrareschi, Fontana, Foccu, and whatever they may all be named: then to the greater and later works of Simil (Le Vatican) and of H. von Geymüller (die ursprüngliche Entwurf für St. Peter in Rom), the researches of Jovano-vits, Garnier, and of many others. For the structural portion see the Essays of Poleni, as well as of the author, "Zwei Grosskonstruktionen der Renaissance." (Zeits. f. Bauw. 1887. p. 481). But we especially recommend every visitor of the eternal city to view the large wooden models of the different architects, preserved in S. Pietro. Permission for this is given readily by the Majordomo S. H. d. P. to professional men; access to the models is from the staircase leading to the dome.

*Note 286. Fig. 489 is reproduced from Hauser. p. 43, 44.*

At the age of 72, Michelangelo took charge of the building (1547) and retained this until his death (1564), "so that some scoundrels might not be pleased by his resignation, until the building was entirely completed." Not only his fame but also his insight, the art feeling and elevated culture of his employers guarded the design beyond his life, until Sixtus V finally completed the dome in 1590, unfortunately with the omission of the beautiful figure ornament on the main cornice, so finely shown by the model. The mighty rulers of the earth may indeed give preference to a bungler over a good man and abandon the latter for personal reasons; the officials of S. Pietro were great enough to be free from such possibilities.

Brunellesco and Michelangelo did not have the work spoiled by later born professionals, that one had done on his Palace Pitti and the other on his dome of S. Pietro. They were moreover free from the modern endeavor "to create something novel



in the spirit of the first masters," and to bring things to light, which the original masters would never have approved, and for which they would have been blamed and ridiculed by intelligent posterity.

Now the entrance facade would appear with the free colonnade may be seen in the copperplate of the jubilee year of 1600; what it became is shown by Fig. 491 from the illustration by Fontana;<sup>287</sup> what was attempted on it by bell towers etc., by Bernini<sup>288</sup> and Maderna may be seen and read in the work mentioned below.

Note 287. In *Il Tempio Vaticano e sua Origine*. Rome. 1694.

Note 288. Gurlitt, C. *Geschichte des Barocco, Rokoko, und des Klassizismus*. Stuttgart. 1887. p. 337, 351-353.

Much on the exterior may not be happy in all parts, but the all-dominating dome causes this to be forgotten; it is indeed Michelangelo's greatest work, with which he "satisfied the longing of the entire Renaissance."

Note 289. Fig. 491 is from Fontana, Note 287.

Comparison with other buildings of great dimensions best enables us to realize the scale of the magnitudes of S. Pietro. Bays of the 5-aisled Cathedral of Ulm may be placed within the domed area of S. Pietro and not extend to the outer limits of the transverse arches of the intersection (Fig. 492); twice the height of this Cathedral to the ridge of the roof reaches only to the base of the lantern. And the bronze canopy beneath the dome, about 98.4 ft. high to the top of the cross, equals the height of Palace Farnese in Rome, measured to the eaves. (Figs. 493, 494).

If we further make a cross section of the Cathedral of Bourges and place it on one made through the dome of S. Pietro (Fig. 495), it does not entirely cover the latter. What a use of piers, buttresses, and flying buttresses was required in this mediæval masterpiece in order to span the same width, which is done in S. Pietro by a single vault; not considering the height at all. What conditions, what waste of materials on the one hand, what simplicity and clearness on the other!

Yet a glance at the internal decoration in comparison with what was undertaken in Florence. In Rome a serene and noble





magnificence, which marble, stucco, and gold, the polychromy reserved for the dome, best there in mosaic work under white daylight unbroken by color, and what is the chief thing, the architecturally correctly designed subdivision of the surfaces of the vault. (Fig. 496). The domical vault soars more proudly thereby; it receives life and movement; the heavy mass is elevated. And in Florence? On a badly lighted ground a crowd of men in a refined desert, without enclosure and without composition, lacking a scale for this!

Lastly something on the treatment of the Place before the building, according to statements made by Fontana. Many words of praise and blame have fallen upon this; much has been sought behind the arrangements, which was never there concealed, and they were finally simple reasons, which required the now existing forms. It should not be here forgotten, that the pavement of the Church lies very much higher than the street leading to it, i.e., that a considerable fall from the threshold of the doorway to the Bridge over the Tiber (Bridge S. Angelo) was to be overcome. The heights of both were given; even the form of the Place was necessitated partly by Palace Vatican and partly by existing houses on the other sides; likewise must be considered the possibility of a rapid removal during the day, of the water from storms and continued rains upon so vast an area.

The variations of the site led to the design of the great stepped terrace A (Fig. 497), and the departure of thousands after the close of a festival service thereon, to its magnitude. Bernini skilfully veiled the surrounding buildings by the semicircular shape of the porticos E, F, and he thereby obtained a great atrium, that has the dimensions of the Colosseum in its area. The width of the facade with the carriage porches gave the beginning points for the connecting corridors D, A, next the portico, whose location was again practically fixed by the sloping site. If the circular form of the porticos is to remain effective, then must the gap for the view of S. Pietro not be made too wide, by which the beginning points of the corridors were determined on that side. Thus indeed originated the oblique positions of the corridors. Through them was the passage to the Palace, toward the Scala Regia, and to the



Church. In order to make a more convenient access for the people, Fontana<sup>290</sup> worked it out thus and gave a gentle inclination to it, since the Church lies higher than the beginning of the porticos. The problem could only be solved by the plan of numerous flights of steps, or by an inclined plane. In order to not fall into greater errors, the latter was decided upon. The narrowness of the corridors must then become parallel to the inclination of the Place (gli ornamenti di questi corridori disposti per necessita in pendio, paralleli alla declinazione della piazza), while the pilasters and window jambs must evidently remain vertical. Thus is explained the peculiarity of the oblique architecture in the connecting corridors. Nowhere is any reference made concerning a perspective folly in this, in the descriptions of the old masters: everything is explained by the material requirements.

*Note 290. Fontana. Book. 4. Chap. 5. p. 195.*

At *a* in Fig. 487, the porticos were formerly to terminate with two great carriage ways on the right and left, but this remained undone. On the contrary, Fontana proposed to erect a campanile or a magnificent architectural work at *B*, at the same distance from the Obelisk as the Church, to replace the removed Tower of Bernini, with water-works behind it at *W*, where other connecting porticos *F N R* were to extend to them, to be animated by fountains at *R*. With reference to the course of the Tiber and to lose no building sites, the streets were to converge to *a* and *b*. But if the design be considered a piece of perspective art, then it must have been effective only from the loggia for the papal blessing; but with the design represented in Fig. 497, this could only produce an illusion as to the extent of the Place and the length of the street of access, as well as of the number of the waiting multitude of believers.

*Note 291. Reproduction from Letarouilly & Simil. Vol. 2. Plate 30.*

With the same calmness in his perceptions of things, Fontana likewise explains to us the very surprising design of the Scala Regia, where likewise a perspective deception was not intended. He explains thus:-- when the Pope desired to go from the Palace to the Church, the then existing passage was dark and dangerous:





therefore he had another constructed by Bernini, well lighted and magnificent, with noble ornamentation. The problem is represented as unusually difficult to work out, for he had to take into consideration the following:--

- a. The course of the walls of the Sistine Chapel.
- b. The course of the above mentioned connecting corridors.
- c. Access to the Repiano Reale required the same height for the imposts as on the arches of the corridors.
- 502 d. A change to a narrower flight must be made at the Sistine wall.
- e. The reduction in the heights of the vaults was required by the location of the floor of the Sala Regia.

Here there is also nothing said of an intended perspective effect!

How Bernini solved the problem under these difficult conditions remains worthy of admiration.

#### 334. Final.

As a worthy closing for domed structures and central churches may be taken the well-known and most magnificent Church in Venice, named S. M. della Salute, begun in 1631 and transferred to the clergy in 1656, built by the architect B. Longhena. Especially prominent are the interesting ground plan and the beautiful interior, and the not always approved double consoles at the corners of the octagonal stage. The internally octagonal dome is massively vaulted, the external protecting dome with its graceful lantern being made of wood and covered with lead.

As the last reminiscence should be taken the grand sepulchral Church of the Kings of Sardinia, the Superga near Turin, doing honor to Victor Amadeo II, built by Juvara between 1717 and 1731 and consecrated in 1749. <sup>292</sup>

*Note 292. Also compare Gurlitt. Chap. 22. -- For Longhena and his school. Chap. 7 of the same work.*



## Chapter 34. Church Fixtures: Church Furniture.

## 335. Basins for Holy Water.

The internal fixtures of the churches enjoyed in a special degree the favor of the new style; "which is the more easily explained, as the decorative was indeed the weakest and the most capricious side of the previously predominating Italian Gothic."

At the entrance to the House of God and near the doorway is placed a basin for holy water for the symbolic purification of those entering, with which the believers sprinkle themselves as a preparation for devotion. (Fig. 499).

Holy water basins were made of stone and of metal, and they either in the simplest way projected from the wall like consoles, or they were smaller basins supported by candelabra-like supports, -- detached creations of art-industry, which formative art undertook with the highest means.

Of metal in the simplest shape is the basin made in the Church Montegiusta at Siena, held by an arm projecting from the wall (Fig. 500); of marble is the beautiful basin in S. M. Novella in Florence, which is half embedded in the wall, the hollow in the wall being covered by a delicately grooved shell, -- in its simple beauty being a classic model of this kind (Fig. 499).

Among detached marble basins, as the richest are to be designated those executed by Federighi (1462, 1463) in the Cathedral at Siena, where the antique tripod form was anew employed as a support, covered by the most splendid sculpture. The small fishes added in low relief within the basin must be credited to the too great love of the artist for ornamentation. The supports were formerly held to be antique, the greatest compliment that could be paid to a Renaissance master. (Figs. 502, 503).

Like these but somewhat simpler, were executed the holy water basins in the Cathedral at Orvieto, and very nobly treated was that by Rossimo (1518) in the right transept of the Cathedral in Pisa. In the form of a small ship on a rich candelabra support was made that in S. Trinita at Florence (Fig. 501).





Peculiarly constructed with a canopy above rich ornamentation on the wall behind it was the basin in the Cathedral at Palermo. (Fig. 504). In the Santo at Padua, the two basins are adorned by the statue of John the Baptist and the figure of the Saint. On a basin by Alessi in the Certosa near Pavia, an obelisk stands on the cover in place of the figure, -- everywhere is the greatest diversity in the external appearance of the same necessary fixture. Worthy of mention as works of art are also the holy water basins in the Certosa near Florence, in the Cathedral at Lucca, in the sacristy of the Cathedral at Empoli, those of S. Pietro at Rome, and others.

Hundreds of others in the different churches of Italy deserve similar praise; but to merely approximately mention them would lead too far!

### 336. Sacristy Fountains.

Consecrated fountains (lavabos), intended for washing the hands of the priests, especially before the mass, as well as for cleansing the sacred vessels, were frequently of the form of a holy water basin or baptismal font, but always were furnished with water-tap and drip basins, and they were placed in the vicinity of the altar and in the sacristies or their ante-rooms. They were executed in stone and were enclosed in architectural forms, sometimes made of colored majolica.

"A work of simple design and genius" is the sacristy Fountain in S. Lorenzo at Florence, ascribed by Müntz to Antonio Rossellino, made of white marble with an enclosure and a circular back of red porphyry. It consists of a basin supported by female figures with bats' wings and fish's bodies. A lion's head adorns the front surface of the trough, from which rises a candelabra, to which two dragons cling and pour the water into the basin. The panel at the back is enclosed by a garland of oak leaves, above which an eagle stands in the semicircle with outstretched wings.

Besides these compositions, arranged rather with a tendency to sculpture, may be mentioned another; the beautiful consecrated fountain of terracotta (majolica) in the sacristy of S. M. Novella at Florence, a work of the Robbias and executed in the form of a small shrine with Corinthian columns, above



which rises a semicircular tympanum with splendid colored garlands of fruit and cupids. On the pilaster capitals were formerly (1866) still to be seen vestiges of gilding, whereby a richer harmony of color was produced in the colored majolica. (Fig. 506).

As the simplest example is to be noted the marble lavatory from Loreto with two angels enclosed by a broad band of roses- (Fig. 505). In the vestibule of the refectory of the Badia near Florence is to be mentioned the beautiful wall fountain of Francesco di Simona (1456-64), made of sandstone; then in the Certosa near Pavia, the lavatory in the first side chapel on the left, in the shape of a shrine with pilasters; further the great "lavabo" with a long trough in the niche covered by a coffered tunnel vault and flanked by pilasters, as well as many others.

### 337. Baptismal Fonts.

The baptismal fountains (viscinac) were basins with living water, especially in the Baptisteries (Baptismal Churches) of the Early period, in whose place came the "Baptismal Font", made of compact stone or metal. These found place in the mediæval churches at the entrance, and they were shaped like cylindrical vessels or as round and polygonal bowls or basins. An example of simpler and smaller type, with a John the Baptist on the cover, is preserved in Tori (Fig. 507), and another simple one is made of marble and bronze in the Church S. Marco at Venice. (Fig. 508).

A richer composition with octagonal basin, from which rises in form of a ciborium an octagonal domed structure decorated by niches and figures, is the font del Battesimo in the Chapel of S. Giovanni in the Cathedral at Siena, executed by different masters in the time after 1480 (Fig. 509), and as a work entirely made of bronze, we find on the left of the entrance of the great pilgrimage Church in Loreto, -- the too richly ornamented basin with the four statuettes of faith, love, hope, and constancy, crowned by a figure group, the Baptism of John, (Fig. 510), all executed by Tiburzio Vercelli and Giambattista Vitale.

### 338. Internal Pulpits.

The Pulpit (suggestus) was in Italy already in the 13th century





509 century placed on a pier of the North or South side of the middle aisle, and it was constructed as a small podium with closed balustrade and stairway resting on columns, usually made of stone. The Renaissance dropped this form and placed the pulpit enclosure on a single support, hung it on a pier or on the surface of a wall of the church, and proceeded in its development from the simple to the magnificent of the highest rank.

Construction in stone continued to be preferred in the good period: those of wood, with or without sounding boards, belong to the Barocco period.

The ancient form was still recalled by the bronze pulpits of Donatello in S. Lorenzo at Florence, which rest on columns and were only so made on account of the reliefs.

As an example of the simply beautiful hanging pulpit may be mentioned the Reader's Pulpit of Michelozzo in the refectory of the Badia near Fiesole (Fig. 511), and as an undertaking of the highest type, the wonderful marble Pulpit of Benedetto da Majano in S. Croce at Florence (Fig. 512), executed in white marble with gilding, inlaid with glass enamels and red porphyry.

As an equally worthy piece and an example of a marble Pulpit resting on a pier may be noted that built by Mino da Fiesole and Antonio Rossellino in the Cathedral at Prato (Fig. 513).

510 From a similar idea proceeded Antonio Gagini with the white marble Pulpit in the Cathedral at Messina, but which in accordance with the time already shows bizarre forms on the lower portion and has an octagonal, instead of a circular enclosure. These stone pulpits are likewise without sounding boards, like almost all of this period of the Renaissance in Italy. Fabrics stretched above them (vela), which frequently covered one or more bays of the church, were a protection from echoes.

511 The later pulpits, for example in Genoa, all have walls at the rear with a spring door forming three sides of the polygon and supporting the sounding board. We find a similar arrangement in Church S. Spirito in Rome, excepting that there the rear wall with the doorway is in one plane.

A supported Pulpit of the simplest form is possessed by Ss. Nereo ed Achilleo in Rome, up to which lead 6 winding steps,



and consequently it is elevated but little above the floor of the Church, like that previously mentioned in S. Spirito, but which bears Barocco forms.<sup>283</sup> Advantages for the speaker and the hearers are connected with the low position of the pulpit, according to the covering and the height of the room. The base of the simple pulpit consists of a cylinder formed like a base, on which rises the octagonal pulpit enclosure, whose balustrade shows simple and tasteless panels; the pulpit is there attached to an octagonal pier of the middle aisle.

*Note 293. See Letarouilly. Vol. 3. Plates 258, 256.*

Permeated by Gothic detail is the hanging pulpit in the Cathedral in Perugia, recalling in its elevation those in S. Croce at Florence, and as a further beautiful example of a hanging pulpit, reference may be made to that carved in S. M. sopra Minerva at Rome, sculptured in wood and belonging to the Barocco style: caryatids are here arranged at the angles of the octagonal balustrade with rich figure ornamentation of its panels.

### 339. External Pulpits.

As examples for preaching pulpits on the exteriors of churches may be mentioned the two small ones on the beautiful vestibule of the cathedral in Sesto, and that of Donatello on the Cathedral in Prato, furnished with a protecting roof, with their precious reliefs with small figures on their balustrades. (Fig. 514).

### 340. Tabernacles.

The Tabernacle for the consecrated oils (Tabernacolo del' Olio Santo) are as a rule inserted in the wall on the Epistle side as closets, and they are generally executed in the form of a small shrine. Such a one exists in the Badia near Arezzo, flanked by small Corinthian pilasters and covered by a segmental arched tympanum, which contains a blessing Christ-Child at the centre and two praying angels at its right and left. The panel between the pilasters is designed as a perspectively diminished arched portico, whose rear wall has a small doorway. a console on the wall is ornamented by an eagle and supports the structure.<sup>294</sup>

*Note 294. Published in von Geymüller. Illustrazione Storica. Plate 3.*





We have a still more charming example at the end of the left side aisle of S. Apostoli in Florence, a small work of Andrea della Robbia, yet worthy of examination, -- similar in composition, -- on which in addition to the burned-in colors, also yet exist vestiges of gilding.

#### 341. Tabernacles.

Following this are to be mentioned the shrines for the sacrament (Tabernacle, Ciborium), sometimes placed in niches, sometimes detached, executed in bronze and marble. As a small peripteral Corinthian structure covered by a dome, the whole resting on an antique vase, is designed the bronze ciborium in Church Fontegiusta in Siena (Fig. 500). As an original creation of energetic form may be taken the likewise bronze ciborium on the high altar of the Cathedral in Siena (Fig. 515), with its charming ornamentation of little figures and angelic forms supporting candles.

To the most beautiful style of the best period belongs the marble ciborium in the choir of S. Domenico at Siena, a work of Benedetto da Majano. From a support adorned by festoons rises a base decorated by lion's paws and acanthus leaves, which bears representations of the four evangelists in relief in circular medallions, above this being on a richly ornamented canopy portion an octagonal tempietto with a statue of Christ on the apex of the dome.

Besides this should not be forgotten another marble piece of magnificence of the early time, the ciborium now placed in the Baptistery at Volterra, a work of Bino da Fiesole, which is not so fluent in shape, yet deserves the greatest estimation in its architectural severity and the purity of its details. A square structure with pilasters on the angles, above a cylinder decorated by flat niches.

Beautiful, though less important, is likewise the marble tabernacle on the old main altar of Ferruccio in the Cathedral at Fiesole, an octagonal tempietto, standing on an antique vase support in a shallow niche of the altar.

#### 342. Altars.

Chief altars (altare principale) and side altars (votive and mass altars) are to be distinguished between. The former finds



its place in the principal choir; the others are placed in the side aisles and chapels. Placed free before the apse in the Early Christian period, the chief altar retreated into its choir niche in mediaeval times, which was likewise followed in the Renaissance, where a peculiar arrangement did not occur, as for example, in S. Spirito at Florence and in other places, or when a numerous clergy had to take its place in the high choir behind the high altar.

From the 6th century, the lawful form for the altar was that of a stone table like a sarcophagus: the *mensa* (Tensa). The altar table resting on columns of the Eastern church, as well as the likewise early developed canopy altar (*ciborium*) were borrowed from the East in the 11th and 12th centuries. The Early Christian and Roman Churches S. Clemente and S. Giorgio in Velabro, for example, exhibit above the altar table the protecting covering resting on columns. The kind last mentioned, -- detached altars with tabernacles on columns, -- continually occurs, though less commonly in the Renaissance, whereas the sculptured altar attached to the wall was in most frequent use, for that the altar had painted pictures in tall and rich architectural frames behind the altar table, finally succeeded by the stone altar wall.

### 343. Altars with Canopies.

Of the first kind must be mentioned as a model work in marble the canopy altar *del Crocifisso* in S. Miniato near Florence, a work of Michelozzo (1448), that consists of a simple altar table with two free and two engaged columns, that support an antique-like entablature with a tunnel vault above this, <sup>295</sup> ~~resting~~ it being a solid wall adorned by figures of different sizes. Designed by the same artist, enlarged like a chapel and resting on 4 columns, is the Tabernacle in Santissima Annunziata at Florence, executed with colored frieze and coffer-work by Pasquo di Portigiani (1448-52), <sup>296</sup> a delicately detailed work, aside from the Barocco additions.

*Note 295. Represented in von Geymüller: Michelozzo. Plates 11, 12-1.*

An uncommonly interesting piece in both general and detailed treatment is the canopy altar in S. Francesco at Pescia by Laz-





Lazzaro Cavalcanti: the ceiling in form of a tunnel vault is supported by piers with interposed columns, and the altar table rests on a cancellate-like support; behind the latter appears a great crucifix.

In the Church Madonna del Sasso near Bibiena; the ciborium is designed as a small temple decorated by columns. Four columns support an antique-like entablature and four low pediments, above which rises a dome like a lantern; above the altar table is found a solid wall with a figure of the Madonna.

Again supported by only two columns and covered by a tunnel vault is the rebuilt altar in the Church Madonna del Calcinajo outside Cortona, a beautiful work of Giorgio Martini. Standing entirely free beneath the intersection and dome of S. Spirito in Florence is the canopied altar with its statues by Gaccini, (1600 ?), and the tabernacle executed in bronze in S. Pietro at Rome may be named as a colossal and at the same time an airy example.

#### 344. Sculptured Wall Altars.

On sculptured altars attached to walls, the front side of the table is covered by reliefs; above the table rise statuettes and reliefs within a rich architectural enclosure, or the entire wall behind them may be treated as a great and stately niche with sculptures and ornaments.

Unequalled in the beauty of its decorations and with figures of the highest worth, the altar of the Fontegiusta in Siena (1517) was executed by Marina with the richest ornaments, wrought almost detached. Angelic children and old men belong with the most perfect and most beautiful works in detail found in this endeavor after magnificence in the decorative art of the Renaissance (fig. 516). A similarly strong work is the Piccolomini altar in the Cathedral at Siena, where the altar niche is enclosed by a complete triumphal arch, that extends to the crown of the vault. As another fine example may be mentioned the sculptured wall altar and its costly enclosure in S. Cita at Palermo, where the surfaces of the pilasters consist of superposed panels with figure reliefs (Fig. 517).

The sculptured altar with statues and reliefs in the architecture of the wall is especially developed in Naples, where it



is all frequently arranged within a niche with the greatest luxury.

As delicately detailed is still to be noted the altar of Alexander VI in the passage to the sacristy in S. M. del Popolo in Rome, a work of Andrea Bregno (1473); <sup>296</sup> good proportions, graceful arabesques, and sculptures in excellent style; especially beautiful is the head of Christ within a semicircle over the principal cornice. The shallow shell niche subdivided by pilasters contains statues of S. Maria, S. Catherine, and S. Augustine. Another beautiful marble altar is to be found in the fourth side chapel on the right side of the same Church, with Saints Vincent, Catherine, and Antonius. (1497).

*Note 296. Published in Letarouilly. p. 567, Plate 278.*

As a precious work, ornamented by all the highly prized art of the Robbia school, appears the main altar of S. M. della Grazie near Arezzo with angels' heads, cupids, medallions, the Madonna with praying angels in the tympanum, as well as an ornamentation by small figures within the arches and on the front wall of the altar niche, wherein should not be forgotten the well known precious colored garlands of fruits and the figure of the Madonna. An ever youthful charm resides in these creations.

Large and rich enclosures of altars in colored terra cotta from the end of the 15th century in Padua (Eremitani) and by Giovanni Minello are to be mentioned, as well as especially rich, large, and splendid enclosures of altar figures, executed in marble or terra cotta in Vicenza (S. Lorenzo, S. Corona), where the fifth altar on the left is "one of the most magnificent imaginative works of this kind." Verona likewise has a series of great and rich works to show, and the most charming, especially happy in <sup>their</sup> elevation, are the altars in the transept of S. Marco at Venice, entirely executed in white marble by Pietro Lombardi.

#### 345. Altars with Paintings.

As altars with pictures are to be designated those, where within the monumental enclosure above the simple altar table is arranged a painting on the wall, filling the entire back of the niche. Then others with a painting standing on a base





(step) within an architectural enclosure composed of pilasters and an antique-like entablature; the latter is carved in wood and covered with colors, usually blue and gold; the surfaces of the pilasters are then decorated by gold ornaments on a blue ground, and the capitals, as well as the architrave and the main cornice, are entirely gilded; the frieze between them exhibits on the contrary gold scroll ornaments in relief on a blue ground.

Venice and Florence possess the greatest abundance of this kind of enclosure, especially Florence in the S. Maddalena de' Pazzi and in the transept and rear portion of S. Spirito. "Here alone may one realize how a Sandro or a Filippino makes no perfected impression within a plain or gilded wooden frame with little ornamentation, for only these magnificent frames beautifully echo the extremely rich life in the painting."

The most important example of this harmony of picture and frame was left to us by Mantegna (1459) in his Enthronement of S. Maria, with musical angels and saints in a magnificent enclosure with pedestals beneath them; the work is at present hung on a wall of the choir in S. Zeno at Verona, and it has an entrancing effect.

As examples of the before mentioned altars with fixed mural paintings and a simple table should be mentioned those in the Ghigi Chapel in S. V. del Popolo and in certain side altars in S. Pietro at Rome; the mural pictures in the latter are frequently executed in mosaic.

The Barocco period indulges preferably in these massively architectural and too richly developed wall-altars, enclosed by straight or twisted, single or coupled columns, with curved and broken pediments, wherein likewise occur works of sculpture instead of paintings, as is the case in Church Gesù at Rome, for the altar of S. Ignatius, executed by Andrea Pozzo.

A combination of table altar with a pedestal and a tall tabernacle structure of the most splendid kind, on which are lavished marble, bronze, and the nobler stones, with figure ornament and costly reliefs on the front of the altar table, is shown by the chief altar of the unequalled Certosa near Pavia,



which desires to excel all others in this also (Fig. 518). It is a work of the 16th century, in which participated Bramante, Marini, and Orsolini, the latter executing the two angels on the table, and then especially Annibale Fontana, the famous bronze-founder, who made the candelabras and the obelisks.

The 12 marble altars in the Cathedral at Pisa may likewise be here mentioned as further examples of wall altars in a rich and imposing style, by reason of the fact, that their designs are attributed to Michelangelo and their execution to Stagi da Pietra Santa.

#### 346. Altar Crosses.

The cross belonged to the liturgic equipment of the altar from the earliest period. Made of a noble metal, it formed the architectural finial of the ciborium (Ss. Nereo ed Achilleo and others in Rome), or it may hang above the altar, suspended before it. It was later on the retable, and it was finally placed on the table itself between the candlesticks as an altar crucifix. As in ancient times, the ornamental characterization and decoration of the ends of the arms of the cross was retained and developed by the Renaissance.

From the earliest period to the present day, these crosses have been made of wood, of wood covered with gold leaf, solid or hollow, entirely of gold or silver, of ivory, amber, bronze, and of stone. A well known and beautiful example of a silver altar cross of Florentine work is given in Fig. 519. Beautiful works are likewise to be found in the Argenteria of Palace Pitti in Florence, among which are especially to be noted the bronze crucifix of Giovanni da Bologna and then the silver cross given (1582) for S. Pietro in Rome<sup>297</sup> by Cardinal Farnese.

*Note 297. Illustrated in Simil. Vol. 2. p. 36.*

#### 347. Candlesticks.

Since the 12th century and universally after the 13th, candlesticks form a part of the altar decorations. Made of marble after the designs of Michelangelo, they are to be found in the Chapel Medici (S. Lorenzo) at Florence (Fig. 521), and charmingly executed in bronze by Alessandro Bresciano, on the<sup>528</sup> altar of S. M. della Salute in Venice (Fig. 520). Of the same metal are likewise the beautiful candlesticks of the high alt-





altar of the Certosa near Pavia made by Annibale Fontana. Already of Barocco design are the silver candlesticks in the choir of S. Stefano (1557-1617) in Venice, those of the Chapel of Antonius at Padua and at other places. Other rich pieces are preserved in museums, for example in Museum Giuvico at Bologna, in Museum Nazionale (Bargello) at Florence, etc.

Besides altar candlesticks, the great candelabras and the Easter candlesticks are especially objects of artistic treatment: these were executed in wood, bronze, in the noble materials, or even in marble.

A very old piece of this kind from the period of the Cosmati, prominent for its decoration full of movement, is the Easter candlestick in S. Cesareo in Rome. Of bronze are made the candlesticks beside the high altar of S. M. della Salute in Venice by Andrea d'Alessandro Bresciano, those of lesser importance in S. Petronio by Agostino de Marchis (1468), then some to be found in Museum Bargello in Florence. Of those represented in Figs. 522 and 523, the larger chasis by Valerio Cioli (1529-99); the smaller is designated as the work of an unknown Tuscan in the 16th century.

A splendid piece of the first rank, "which sums up the entire decorative knowledge and powers of the Paduans of the time," is and remains the great bronze candelabra of Andrea Riccio (1507-16) with a marble base by Francesco da Cola (1515) in the Santo at Padua (Fig. 524). A wealth of ornaments wrought with spirit, but too many good things!

Of massive gold are two candelabras made in S. Pietro at Rome (1518), which Simil (Vol. 2. Pl. 38) publishes with the note; executed by Benvenuto Cellini after the designs of Michelangelo and Raphael!

Of the larger wooden candelabras for churches, two are especially prominent; the one made by Fra Giocondo for Monte Oliveto near Buonconvento (Siena) and another with the most beautiful taste in details but less perfect treatment in elevation, in the Church of S. M. in Organo in Verona (Figs. 525, 526), carved by Fra Giovanni da Verona.

#### 348. Hanging Lamps, Chandeliers, and Bracket Lamps.

Lighting with oil was still rare in churches in the middle



ages, but later found extensive employment, especially by the so-called eternal lamps; these were in the form of suspended lamps.

A great number of such hanging lamps of earlier and later periods and executed in the noble metals are to be found in S. Annunziata at Florence, in the chapel built by Michelozzo on the left of the entrance.

As a monumental example may be taken the bronze lamps suspended in the main aisle of the Cathedral of Pisa, made after the design of Battista Lorenzi (1587), on which Galileo must have made his observations on the pendulum. Two circles are connected together by 4 S. Andrew's crosses, between which are inserted supporting cupids, and these receive a volute cap above and a volute base below; the rings have candle-holders and small plates supported by chains, forming a transparent whole.

Chandeliers with hanging glass or crystal ornaments were favorite pieces of decoration in all Italy for church festivals.

As works in stone are to be mentioned the four marble candle-labials of Matteo Civitali from Lucca on the choir enclosure in the Cathedral at Pisa.

Bracket lamps of bronze in the form of angels supporting basins and holding candles are to be found at the high altar of the Cathedral in Siena, where as further side lights, larger figures of angels standing on consoles are attached to the piers. The slightly clothed statuettes hold the arm extended straight in a rather theatrical pose, in the hand being a small cup with the pin for the candle.

#### 249. Reliquaries.

At certain church festivals, in addition to the relics necessary to the consecration of the altars, yet others are exhibited, which are contained in artistically wrought and costly reliquaries of very varied kinds and forms, and whose exposure on the altar was expressly favored by Leo IV (847-55). These were made in the form of ivory caskets or cases, boxes of fine woods covered with silken fabrics, wrought in gold and silver, cut from fine stones or crystals, or of gilded copper and brass, and they could not be shown without the reliquary; they were preserved either on the table of the altar





or in the wardrobes of the sacristy, and they appear as receptacles for the entire body, or as small caskets for receiving little portions. Likewise were they made in the form of busts for containing the skulls of saints or martyrs, in the shape of arms for concealing the hollow bones of the arm, as fingers, feet, or other larger portions of the body, as figures (images), i.e., statuettes of the saints, whose relics were therein contained; <sup>299</sup> in this case, they were of wrought metal or were cast hollow. But they were likewise formed as monstrances, where the relic is found in a cylindrical tube of glass or crystal, so that it might be seen externally. A beautiful example of this kind, a certified Italian work from Perugia, is given in Fig. 527.

*Note 299. See Otte. Vol. 1. p. 183 et seq.*

### 350. Sacred Vessels.

To the altar likewise belongs all the so-called sacred vessels used for liturgical purposes; chalice and their accessories, patens, caskets for the host, ciboriums, and monstrances, measuring cups and vessels for pouring, censers for incense and little ships, vessels for holy oil, mass bells, holy water basins, etc.-- Works of art and of art industry, which it would go too far to treat in detail in a book on architecture.

### 351. Stalls and Paneling.

There prevailed together two methods in construction for treating the carved and joiner's work; the smoothly inlaid work (intarsia, marquetry) and the sculptured work, flat to strongly projecting, even with undercut reliefs and partial gilding, that later became more common. Both methods were separated or were exercised in common on the same piece; for representations of figures, intarsia was preferred. In certain cases also occurred an imitation of intarsia by painting.

Until about the middle of the 16th century, joinery was limited to tolerably pure forms; but it then shared the fate of architecture; it deteriorated in external effect and eventually became poor. The Rococo breathed new life into the stall-work for a time; but this improvement did not last long.



A general representation of the arrangement and treatment of a stall is given by Fig. 528 from the choir of S. M. in Organo at Verona. The following works may be more fully considered in detail as the more important and be so regarded.

1. From the earliest period and with still Gothicized details are the choir stalls by D. da Gajuolo and F. Manciotto, now preserved to us in the choir of S. Miniato near Florence.

2. Allied to this work is the paneling in the sacristy of S. Croce (1440-50) by Giovanni di Micheli with its finely graduated interiors, and the close of the works of the 15th century in Florence is formed by the backs of the choir stalls in S. M. Novella by Baccio d'Agnolo.

3. There are preserved in Siena from the period of 1415-1429 likewise strongly Gothicized choir stalls in the upper chapel of Palace Pubblico.

4. In Modena exists a choir stall of 1465 and some paneling.

5. Wardrobes in the sacristy of S. Marco (1450) at Venice, begun by Sebastiano Seravanti, continued by E. Ferrante from Bergamo and completed by others; they show well carved architraves and large intarsias.

6. "To the finest intarsias in Italy" belong the magnificent stalls in the choir of the Certosa near Pavia (1486), executed by B. de' Polli after Borgognone's designs.

7. The stalls in the lower portion of the choir in the Cathedral at Pisa, wrought by Domenico di Mariotto and his associates (1478-1515), patched together again with the original parts after the fire in 1596, exhibit beautifully carved supports and arms with charmingly treated scrolls and fine acanthus forms (Fig. 528).

8. Allied to the former but still more finely designed and executed are the arms in the Church S. M. della Carceri at Prato (Fig. 529) and those in the Badia at Florence (Fig. 530).

9. The famous stalls of the choir of S. Domenico at Bologna with delicate figure intarsias, executed by Fra Damiano Zambelli da Bergamo (1490-1549) with the aid of his brother and several assistants in 1528-50, seek their equal





throughout the world. An immeasurable richness with the most skilful handling of the picturesque. By the assistance of metal inlays for weapons and the graduation of the tones of the wood, the highest point is here reached, that was ever attained by intarsia work.

10. As a good work of Riccio (1560) must be mentioned the choir stalls of the lower Church in Monte Cassino.

11. Also those by G. Gigli (1534) in S. Francesco.

12. Naples is especially rich in works of the Barocco period, the transition to which is made by the costly wardrobes in the sacristy in the Annunziata by Giovanni da Nola (1540).

13. A very interesting work, especially in decorative respects and in scroll work with figures are the stalls of the cathedral choir in Genoa, carved with a perfect mastery by A. da Fornari. (1514-46).

14. As a remarkable work worthily following the Genoese stalls should be mentioned the choir stalls of S. Giovanni at Parma, said to have been made by Zucchi and Testa (1512-1538).

15. In the choir of S. Giustina at Rome are rich stalls from the beginning Barocco period by Riccardo Taurino of Rouen.

16. Some likewise belonging to the Barocco period (1557) are to be noted in Venice in the choir of S. Giorgio Maggiore, by Alberto di Brule.

17. The famous stalls in the choir of S. Pietro in Perugia, the work of Stefano de' Zambelli da Bergamo (1535), deserve the highest appreciation by their noble magnificence and their perfect taste.

18. Worthily placed next the preceding in the "splendidly happy" choir stalls in the choir of S. M. Maggiore in Bergamo with the charming intarsias of Francesco Capodiferro from Lovre (1522-52), on which his brother and his son Zinnino helped (1547-54). The front of the stalls is decorated by a slender wooden arcade portico with carved acroterias (sea monsters and candelabras), and it is a work of Giovanni Bellini and his sons. (1540-74). An undertaking of Italian art industry of the highest rank exists in this creation.



19. But everything is lowered by comparison with the works of Fra Giovanni da Verona (1457-1525) in the Church of his Monastery in Verona, S. M. in Organo, -- a work as beautiful as skilful (Figs. 525, 531). The paneling of the left wall of the sacristy is somewhat later and richer, already being somewhat overloaded in details, but of amazing execution. The carved work is charming and assured, and in spite of the frequent repetition of the same members, it is not wearisome to the observer, since everything was treated with equal love by the sculptor.

20. In the sacristy of S. M. della Grazie at Milan is an example of the imitation of intarsia by painting on wood.

21. An example from the 17<sup>th</sup> century is afforded by the choir stalls of S. Pietro in Rome, <sup>300</sup> dated in 1626 by Simil.

*Note 300. Published in Simil. Vol. 2.*

### 352. Lecterns.

Lecterns and choir stands are further to be described. In the choir of the Cathedral at Pisa is a lectern (Fig. 532), executed by Matteo Civitani from Bucca, that consists of an antique-like candelabra and an eagle with extended wings, a <sup>301</sup> motive already prized by the preceding period of art. Another lectern, belonging to the later period (1626), and where the reading board is supported by cupids instead of the eagle, is to be found in the choir of the Canons in S. Pietro.

*Note 301. Represented in Simil.*

Another more beautiful one was executed by Fra Giovanni da Verona for the choir of his Church S. M. in Organo in Verona.

Likewise is there one in Museum Bargello in Florence with inlaid work and good carved work (of 1498), which in the year 1866 still stood in the Monastery of Oliveto near Florence; at least the same one was there drawn by me.

### 353. Bishop's Thrones, Confessionals, and Choir Galleries.

An ornamental masterpiece of "intarsia simplified by the antique" is the bishop's throne in the Cathedral at Pisa, wrought in 1536 by Giovanni Battista Cervalliera. From the





middle of the 16<sup>th</sup> century date the two thrones above the choir steps there. (Fig. 533).

As examples of confessionals and as thoroughly earnest work of the 17<sup>th</sup> century may be mentioned one of these in S. Michele e Gaetano at Florence and one in S. Michele in Bosco near Bologna by Fra Raffaello with the remarkable representation of the nude "Luxury".

One of the most prominent choir galleries, showing the greatest luxury in the best sense of the word, is that of white marble with the gilding of some ornaments in the Sistine Chapel at Rome. <sup>302</sup>

*Note 302. Ascribed by Simil to Baccio Pintelli (1474). -- Burckhardt recognizes in the "similarly decorated marble screen" of this Chapel the two workshops of Nino da Fiesole and of Giovanni Dalmata.*

#### 354. Organs.

Of organ galleries, there are first to be mentioned the two executed in white marble in S. Annunziata in Florence; as rich balustrades on consoles above architecture resembling a triumphal arch, one dating from the 16<sup>th</sup>, and the other from the 17<sup>th</sup> century (Fig. 534).

An organ gallery wrought in sandstone with splendid details in S. Maddelena de' Pazzi at Florence, where a closed balustrade with small piers containing niches is employed (Fig. 535), as well as a marble organ gallery in Stefano at Genoa by B. da Rovezzano (1499), should not be omitted.

In S. Giacomo degli Spagnola at Rome is an organ gallery of especial interest on account of the good preservation of the painting and gilding. Burckhardt designates that by Vincenzo Vicentino in S. M. Maggiore at Trient (1534) as a "noble and great organ railing." A beautiful piece of woodwork, where in the execution the color of the wood alternates with blue and gold ornamentation, is the organ gallery in the Cathedral at Lucca (1481), as well as the likewise wooden organ gallery over the door of the sacristy of the cathedral in Siena, made by the two Basili in 1511.

"The most perfect masterpiece of its kind," a work of Giovanni di Pietro, "called Castelnuovo", is and remains the magn-



magnificent organ in the Cathedral at Arezzo by Vasari.<sup>303</sup> A stone substructure with consoles receives the singers' gallery with its stone balustrade. The front of the organ is flanked by projecting Corinthian columns with ornamented shafts, which support an antique entablature with a high segmental tympanum extending to the ceiling vault. The organ pipes are arranged in a square enclosure divided into seven panels, three of which contain the small pipes and four the larger ones, -- a beautiful elevation like a sideboard, on the whole. Between the great consoles of the substructure are inserted niches with figures; in the middle space stands a small altar.

*Note 303. Represented in von Geymüller; Vasari, Plate 11.*

More free in design are the organs in S. M. del Popolo and the two in S. M. sopra Minerva at Rome. The last are found in the transepts and are skilfully arranged over the two round-arched vaults of the two chapels beside the choir. From the spandrils of the two arches meeting on the intermediate pier rise figures, which with the keystones in form of consoles support the organ balustrade. The front of the organ shows the motive of the triumphal arch in the style of the Tombs of the Prelates in the choir of S. M. del Popolo. The figures have almost the tone of white ivory; the pipes are of the color of tin or silver, everything else is gilded.

### 355. Chapel and Choir Enclosures.

Concerning enclosures in chapels and choirs, Rome took precedence with the marble enclosures in the Sistine Chapel, which is assumed to be a work of Mino da Fiesole and of Giovanni Dalmata. From the floor first rises a solid white marble partition 8.21 ft. high, decorated by shields of arms, cupids, and garlands of fruit, on which stand small marble pillars of square section, that support a marble entablature on Corinthian capitals, these parts together being rather more than 6.56 ft. high, so that the enclosure rises to the height of about 14.77 ft. To the pillars correspond marble candelabras arranged for lighting by candles, which stand on the entablature. All surfaces and members are covered by ornaments, the spaces between the pillars are filled by simple metal grilles.<sup>304</sup>

*Note 304. Represented in Simil.*





Altar enclosures of simpler kind, but with the noblest ornamentation and likewise of white marble, were executed in S. M. dei Miracoli at Venice in 1480-6 under the direction of Pietro Lombardi (Fig. 537). The panels with round pieces of porphyry, palms and dolphins, belong with the most charming Venetian works in ornamentation.

Marble screens with grilles and with intermediate columns for enclosing chapels may be found excellently wrought in S. Petronio at Bologna. Enclosures from the 15<sup>th</sup> and 16<sup>th</sup> centuries in the Churches of S. M. Maggiore, S. Giovanni in Laterano, Baptistery S. Giovanni, and S. Pietro in Rome, together with some in Milan and Lodi, are published in the work mentioned below.<sup>305</sup>

*Note 305. Gruner. Plate 62.*

As marble balustrades in pure forms are the enclosures executed in Chapel Carafa in S. M. sopra Minerva at Rome (Fig. 538), with other beautiful examples in S. M. del Popolo there.

Near the high altar in S. M. della Grazie at Milan, the enclosure is constructed of different materials, though belonging to the Barocco period; the pedestals, the continuous base, and the hand-rail consist of red Veronese marble, the framework between these being of black marble, and the inserted panels are of bronze. Grilles entirely of bronze of the era of 1444 are to be found in Chapel della Cintola in Prato by Bruno di Ser Lapo Maggei.

The finest grilles in iron and bronze for enclosures separating the chapels, transepts and choirs from the nave, were executed by the Milanese artists Francesco Villa, Pietro Paolo Ripa, Ambrogio Scagna (1660) in the Certosa near Pavia.<sup>306</sup>

*Note 306. See two examples in Beltrami, L. La Certosa di Pavia. Milan. 1895. p. 130, 131.*

539 The combination of dark iron and light bronze is largely preferred in allied works during the period mentioned. (Second half of the 17<sup>th</sup> century).

### 356. Tombs, Epitaphs, and Cenotaphs.

The custom of interring in churches deceased persons of the ecclesiastical or noble classes, and of marking the places by monuments, extends throughout the entire Christian middle ages;<sup>307</sup>



it continues until the latest period of the Renaissance. Sometimes for high ecclesiastics, as in Rome, sometimes for warlike aristocrats, as in Naples and Venice, then for leaders in science and art or prominent statesmen (S. Croce in Florence), were such artistically treated memorials created.

According to their forms, we have to do with horizontal or vertical monuments, the last of these rather belonging to the later period. Burial places in the former were indicated by stone or bronze plates, which are level with the pavement, which were followed by the so-called Tomb (Tumba). There are masonry tombs raised above the pavement and covered by a stone or metal plate, or entirely constructed of metal plates; then the tomb may be isolated or be set with one side against the wall, also being likewise covered like a niche, after the manner of the arcosolios of the catacombs. Then are also to be added those like biers, tombs of stone or metal resting on columns or animal forms, which even belong to the end of the middle ages.

*Note 307. See Otte. Vol. 1. p. 334.*

Epitaphs and Cenotaphs were erected in memory of the dead on the walls and piers of churches and monasteries, and they belong to the species of vertical monuments.

What the Gothic created in this domain in Italy is very affected in contrast with what the Renaissance produced. The first was satisfied with the sarcophagus placed on columns or supporting figures with scarcely visible and elevated reclining statues, or a tabernacle was set on columns with an oil painting in deep shadow. Where statuettes were employed, they failed in their proper effect on account of their too elevated position, neither were angels drawing aside a stone curtain a happy conception.

The Renaissance utilized this legacy, but it transferred the preceding ideas "beautifully, thoughtfully, and in reasonable proportions." Besides this inheritance, there come under consideration the much earlier antique, which remained not without influence upon these almost richest and most remarkable art works of the Italian Renaissance.

Architecture and sculpture equally take part in the work,





where the most diverse kinds of stone came into use, from the plain sandstone and light marble of a single color to the cost-ly variegated kinds and hard granites or porphyry.

Besides these, bronze was used by itself or in combination with costly stone, as for example, on the Sarcophagus of Giovanni and Piero de' Medici in S. Lorenzo at Florence by Andrea Verrochio (Fig. 540).

Both the temporary and the monumental took part in the monuments in the early period, for beside the white marble, dark red porphyry came into use, especially in the form of panel slabs (Tombs in the Badia and in S. Croce at Florence), or heraldic colors were applied to the marble, especially blue, red, and gold, where also the coat of arms gleamed in the family colors (Tombs in Araceli and in S. Prassede (1474) in Rome), and the wall surfaces behind the sarcophagus were colored a brownish-red. The palls on the state beds frequently exhibit fabrics with golden patterns on a blue ground. (Florence).

The prevailing motive permeating the tombs of the Renaissance is, as a rule, a niche of no great depth, in which stands the sarcophagus below, directly upon this or on a state bed above it being the reclining statue of the deceased, within the semicircle being a Madonna with angels or protecting saints in high relief; the piers of the niche, the ends of the sarcophagus, the imposts and the crown of the arch, are decorated by statuettes and child angels. The niche piers in Florence are almost always treated as Corinthian pilasters; they are more commonly animated by small niches in Rome; transferred into colonnades with statues, we find them in Venice and Verona as parts of larger, more extended, and even wall decorations in the form of triumphal arches.

As a sarcophagus sculptured from marble, the beautiful monument of Angelo Acciajoli in the Certosa near Florence, a work of 1550, alleged to be by Donatello and Giuliano da Sangallo (Fig. 539), with which is compared as the best, the sarcophagus of Sixtus IV in S. Pietro at Rome, cast in bronze by Antonio Pollajuolo in 1493. On a state bed is the reclining statue of the Pope in full vestments with the tiara on his



head, four shields of arms at the angles and six allegorical figures on the vertical surface of the bed. The side walls are divided by consoles ending in lions' paws with three reliefs containing figures at the back and two on each end, -- the whole being an earnest and grand work of charming beauty!

The antique sarcophagus was utilized by Donatello in his Tomb of Giovanni de' medici in S. Lorenzo at Florence (Fig. 540), and Francesco da Sangallo recalls Etruscan models in his Monument executed for Angelo Marzi in the Annunziata at Florence (1546), with the reclining figure of the deceased supported by his right arm upon a simply studied sarcophagus, certainly a very refined conception (Fig. 541), and the same master takes the Roman shrine with a seated figure (1560) for his Bishop's monument. (Fig. 542).

Luca della Robbia likewise adheres to the antique sarcophagus in his simple and beautiful Monument for Benozzo Federighi (1450) in S. Francesco di Paola at Florence. On the lid of the sarcophagus is placed the recumbent statue of the deceased in the vestments with the mitre on his head, on the background of the niche being the half length figures in relief of the Saviour, of the Madonna, and of a Saint; garlands of flowers in flat panels extend around the niche on four sides, crowned by a rather dry cornice. Here is a greater inspiration, a deeper earnestness is in this early creation, than in all later pretentious examples (Fig. 543). Mino da Fiesole was satisfied with a closed sarcophagus resting on consoles and the exhibition of a bust of the deceased for his Bishop's Tomb in the Cathedral of his native place (Fig. 544); the ornamentation is there of the greatest delicacy, tender and beautiful in design and execution.

Donatello fell into the faults of the Gothic in his Tomb for Pope John XXIII in the Baptistery at Florence. He created one animated by niches with figures and pilasters, true Renaissance architecture, above which the simple sarcophagus with the antique-like state bed with the reclining figure of the Pope rests on consoles, but which suffers from its position, too high in relation to the whole. The figure of the Madonna in the shell is beautiful, but the details of the





shell itself are too coarse, and the stone drapery is not a happy addition (Fig. 545). In the same way likewise suffers the Tomb of the Cardinal of Portugal (1459) in S. Miniato at Florence (Fig. 546), where the lower position of the sarcophagus with the state bed is to be commended.

Harnest and good in elevation and details, Mino da Fiesole again continues in the Tomb for Marchese Ugo in the Badia at Florence, where the side panels of the walls of the niche and the spandrels near the round medallions of the Madonna are executed in red porphyry, while all the remainder is made of white marble (Fig. 547).

Allied to this is the Monument of the Florentine brothers Bonsi in the atrium of S. Gregorio in Rome, according to Burckhardt "one of the most beautifully arranged in the entire Renaissance." The busts of the two brothers are exhibited in two semicircular niches of the substructure, on which stands a trough-like sarcophagus, above this being the Madonna and the Child, executed in relief on the wall, with a praying angel on the right and the left thereof. The plain semicircular tympanum is here relieved by a shell with the heraldic arms of the Florentines, which likewise occurs on other monuments; the angles are accented by balusters (Fig. 548); the arabesques are especially delicate.

The highest ornamental movement and style, "explained by Grecian and not by Roman models," appears in the Monument of Marsuppini executed in S. Croce at Florence by Desiderio da Settignano (1450). "Everything capricious has here disappeared; the happiest coordination makes even the greatest richness enjoyable." What was perhaps not later attained in this purity and magnificence is especially the scroll work on the sarcophagus." (See Fig. 121 and compare it with the Biga of the Vatican).

Note 310. See Burckhardt, J. *Der Cicerone etc. Basle.* p. 234. 1860.

The most important and last form to which the architecturally designed wall-tomb could attain, where the triumphal arch is treated with easy majesty as nowhere else, is judged by Burckhardt to be in the Tombs of the Prelates in the



546 choir of S. M. del Popolo in Rome, designed and executed by the great Andrea Sansovino (1505); the arabesques belong to the most beautiful of the entire Renaissance.<sup>311</sup> Besides these art works, there is also in Rome the Monument of Savelli in Araceli (1498), distinguished for its sculpture and decoration, then that of Petrus Ferris in the first cloister of S. M. sopra Minerva, and further to be mentioned is that of Pietro Riario (1474) in the choir of S. Apostoli; with the Tomb of Bishop Bocciaccio (1497) in the cloister of S. M. della Pace, and with these a hundred others of like artistic worth, which cannot even be named here.

*Note 311. Published in Letaroutilly.*

In the Certosa near Pavia and beneath a two-story monument (Sacellum) is the Sarcophagus of Giovanni Galeazzo Visconti, commenced by Giacomo Cristoforo Romano and Benedetto Prioso, (both have left their names inscribed on the monument, the one being on the main cornice and the other on the base of the statue of the Madonna) and completed by the aid of Galeazzo Alessi and of Bernardino da Novate (1492-1569), which especially charms us (Fig. 549).<sup>312</sup>

*Note 312. After the illustration by Beltrame, p. 103 et seq.*

Strongly showing Roman and Grecian influences is the Monument of Strozza in S. Andrea at Mantua (1529), where the recumbent and extended statue of the deceased lies on a slab bordered by an entablature, and which is borne by four caryatids. They recall in form and pose a well known Grecian work in the marble in the Museum Nazionale in Naples, or those of the Erectheion in Athens. Standing on a decorated and common plinth, they give the work a peculiar effect of especial charm. (Fig. 550).

A similar creation is recalled by this, the Tomb of Caracciola in S. Giovanni at Carbonaro, which is ascribed to Andrea di Ciccione. But in place of the female figures, there are three fully armed forms leaning against rectangular piers, and as at the Incantada at Salonichi, these are each wrought from one piece, together forming supports on which rests the sarcophagus adorned by small figures in niches; the front surfaces of the latter are decorated by late Roman aspiring





figures holding a garland.

Likewise the Monument of Giovanni Borromeo, transferred to Isola Bella, a splendid work of the transition style, shows a similar motive with the use of three pillars with figures on the longer sides, which support the richly sculptured sarcophagus.<sup>313</sup> This part of the work is ascribed to Omadeo; according to documentary evidence, Antonio Patti worked on this monument between 1475 and 1479.

*Note 313. Illustrated in Meyer. Vol. 2. Plate 10.*

Omitting the figures from the rectangular Corinthian pillars, but with an arched niche over the sarcophagus in which is found the equestrian figure of the hero, is designed the Tomb of Colleoni in Bergamo.

To this group is also related the Tomb of Doge Mocenigo in S. Giovanni e Paolo in Venice, where in a niche, instead of piers with figures attached, detached figures support the sarcophagus, while with reference to its elevated position, the statue of the doge on the supported sarcophagus is represented as standing.

As a representative of the great Venetian memorial tombs, triumphal arches decorated by columns and with figures in niches, that of the Doge A. Vendramin in Ss. Giovanni e Paolo may be mentioned.

Likewise recumbent and erect figures on the sarcophagus and even the equestrian statue above it (for example, in Bergamo made of gilded wood on account of its weight.!).

From the end of the first half of the 16th century till in the Barocco period, the tomb exhibits as the typical form a great sarcophagus with allegorical figures and with mural architecture and the portrait statue of the deceased. The most talented works of this kind are considered the masterpieces of Michelangelo in the sacristy of S. Lorenzo, the so-called Tombs of the Medici in Florence (Figs. 551, 552). "Architecture and sculpture are so conceived together, as if the master had previously modeled from the same clay sarcophagus, statues, pilasters, cornices, niches, doors and windows. Greatest unity of space, light and forms,"-- a judgement gladly accepted by everyone. With the same basal ideas are executed the Tombs of the Popes in S. Pietro during the same period,<sup>314</sup> among



among which that of Paul III (1549) with the wonderfully beautiful half reclining figures of wisdom and justice by Giacomo della Porta must be designated as the most skilful.

*Note 314. Published in Siml.*

The Tombs in the Chapel dei Principi, the Sepulchres of the Grand Dukes of the House of the Medici in Florence (constructed in 1604) show in 6 niches, executed on a colossal scale, the magnificent granite sarcophaguses of the princes from Cosimo I to Cosimo III (1575-1723), above being niches with partly gilded bronze statues, -- an echo of Michelangelo's ideas, weak in form but surpassing everything else in the costliness of the materials and the greatness of the scale. There was applied to this purpose \$4,400,000, not from taxes, but from the private means of the family! Beyond everything was the Tomb of Julius II, which was to have been the life work of Michelangelo, of which only sketches and single figures (in S. Pietro in Vinculis) have come down to us.

*Note 315. Compare Album Michelangiolesco dei Disegni Originali riprodotta in Fotolitografia. Florence. 1875.*

### 357. Bells.

"Vivos voco, mortuos plango, fulgura frango!" (I call the living, lament the dead, and break the lightnings!).

As signals for public assemblies and for waking the people, bells already existed in ancient Rome, and they were developed further for church purposes. The oldest were indeed small and were riveted together from plates, although even earlier are mentioned cast bells.

The 9th century is the era of the general extension of the ecclesiastical use of bells. The sculptured ornamentation was very modest in the middle ages; it was usually limited to a few outline works and inscriptions. In the upper story of Museum Bargello in Florence are exhibited 7 examples, all of which show an elongated tulip form with the usual edge mouldings, the oldest one bearing the date of 1153, while others have the dates of 1383 and of 1440. Some have the clapper rod fastened at top by keyed bolts, others by screws.

A richly ornamented bell is decorated by garlands on the upper margin and by a band of cupids below. its founder is given





as the Florentine master Giovanni M. Cenni and the date as 1675. On the Leaning Tower in Pisa, some bells exhibit the arms of the Medici, and one of these bears the inscription:--  
 "Fusum . Hoc . Oles . Deoque . addictum . Nicolas . Castello .  
 Aedituo . A . D . MDCVI."

The arrangements for ringing the bells are of different kinds. Beneath the wooden yoke with iron pinions working on iron bearings is fastened a triangular wooden frame, its apex turned inward, and which is set in motion when ringing. Very primitive is the arrangement on the five bells of the Campanile in the Cloister of S. Annunziata at Florence: on the yoke is nailed a wooden board extending downwards, on it being placed a bar at right angles, from whose end hangs the rope for ringing. It should not be forgotten, that not all bells are swung in many churches in Italy, but they are often merely struck.

A masterpiece in form and ornamentation is the great Bell of S. Pietro in Rome (Fig. 553), which was cast in 1785.<sup>317</sup>

*Note 316. Reproduction from Hittorf & Zanth.*

*Note 317. See Plate 39, year 1785, in Simil. -- The lower diameter of the bell is given as 7.84 ft.*

## Chapter 35. Buildings for Monasteries and Brotherhoods.

### 358. Monasteries.

On this side of the Alps in the middle ages, monastic buildings had already attained a high degree of completeness in plan and extent, usually a greater one than in Italy, where scarcely a monastery of importance from the 12 th to the 14 th century is now to be found. But in the 15 th century, the Renaissance again took up this class of buildings, and it generally carried them further and in greater splendor, than was permitted to the North. What favored monastic buildings and gave them a high importance were "the excellent and rational plan and the beauty and diversity of the porticos", which the Renaissance so well understood how to manage. In the varied architectural treatment and development of the cloister surrounded by porticos lies the architectural weight of this species of buildings.



But then it is the church itself of the monastery, whose sacristy and other subordinate rooms, the refectory, the chapter hall, the dormitory, as well as the residence of the prior, and the library, together with the necessary offices (barns and stables), hospitals and rooms for guests, etc., which make the plan so extended and so notable in a high degree.

The magnitude of the buildings and their equipment depends upon the rules and the wealth of the order, which they are to serve. The monasteries of the begging orders were arranged otherwise than those of the rich and prominent Benedictines, and of those which prescribed eternal silence for their brothers, must provide conditions of habitation different from those permitting communication with the external world. Thus in the Monastery S. Marco at Florence, there are arranged small sleeping cells, scarcely as large as a modern prison cell, opening beside each other on a common corridor, and which served for the dwellings of the brothers. In the great Carthusian monasteries (Certosa near Pavia and near Florence), small houses consisting of two rooms, a small porch, a stairway to the cellar, and a small garden, form a detached possession for a contemplative retreat, one being placed beside another and all grouped around a great sunny court (see the plan of the Certosa near Pavia<sup>318</sup> and Fig. 554, plan of the Certosa near Florence,<sup>319</sup> not perfectly trustworthy in all details). Remarkably well preserved in all parts, both monastery plans afford for us today a reliable representation of what the founders desired centuries ago. Likewise the third Certosa in Upper Italy, that near Pisa, is excellently preserved uninjured, with the Barocco gardens and fountains, and with its charming Renaissance double cloister with draw wells of the good period, and it is doubly and triply worth a visit on account of its magnificent surrounding landscapes. A Royal Girls' Boarding School is now sheltered there; yet the buildings are accessible with a guide and without further formalities. The small Renaissance cloister with the transverse portico in one story forms an architectural jewel.

*Note 318. In Beltrami, Plate 8.*

*Note 319. Famin and Grandjean.*





558 Among the great designs are to be reckoned S. Severino in Naples, S. Ambrogio in Milan, Monte Cassino and S. Martino near Naples with its splendid equipment.

If the difference between the dormitories has already been recognized as an important one, then is this extended to a higher degree, if the little church of a most picturesquely arranged, peaceful, entirely plain little Capuchin monastery on a wooded mountain height be compared with the stately church of the Carthusians on a broad plain. Poverty and little art on the one hand, wealth and the most refined art needs on the other; there walls washed white with wooden beam ceilings, clay tiles on the floors, simple tables as altars with wooden candlesticks; here wall surfaces gleaming with marble, gold, and precious stones and richly painted, lofty vaults, floors of mosaic and marble, costly sculptured wall-altars with magnificent paintings, tabernacles of bronze, candlesticks and crucifixes of massive gold and silver, reliquaries beset with precious stones, Easter candlesticks of the most perfect art forms, richly paneled sacristies, choir stalls with the most splendid carvings and intarsias, everything breathing of wealth and of high art (Compare Certosa near Pavia, indeed the most beautiful and richest monastery church in the world).

Thus here likewise were poor devils and rich nobles, who served the Lord God in the same faith and with the same inspiration!

How charming is frequently the little cloister wrapped in vine leaves, surrounded by porticos with bright flowers, a draw well or a jetting fountain in the centre, with the blue sky, sunshine and -- God's peace! Quite otherwise are the splendidly adorned and wide porticos of costly stone, the architecture supported by them being executed in decorated terra cotta (Pavia) or with varicolored glazed majolica (Certosa near Florence), -- frequently exhibiting the ripest work of the established masters.

Charming in Rome is the "cloister of a hundred columns" by Michelangelo in S. M. degli Angeli with the draw-well and the cypresses, centuries old, likewise that by Bramante in S. M. della Pace with its richer architectural motives, which in



their original conception present one of the finest works of the great architect of the High Renaissance. Interesting is the effect of the cloister of S. M. della Quercia near Bag-naja in the forms of the transition style (Fig. 7), then the different cloisters by Brunellesco at Florence, the finest of which is in S. Croce; or that with widely spanning arches and slender columns standing on masonry balustrades, of S. Lorenzo and in the Badia near Fiesole. Likewise the little cloisters in the Certosa near Florence, especially that narrow in ground plan with the small twisted columns of Ionic order set in the upper story, should not be omitted.

On Sicilian soil, the Benedictine Monastery in Catania offers a more academic solution in the plan. The Church is set like a cathedral in the middle of the plan, around it being grouped the buildings of the brothers of the monastery with a symmetrical arrangement of the cloisters (Fig. 555). After its completion, this Monastery became one of the largest of its kind. Begun, abandoned, taken up again and changed, then left unfinished, it shows all the changes in the good and bad taste of the artists, who were successively busied here for almost three centuries. The corner stone was laid on Nov. 28, 1558, by the Viceroy Giovanni de la Cerda; the first plans were made by P. Valeriano de Franchis, a learned Benedictine from Catania. It was completed and occupied in 1578; 104 columns of Carrara marble were erected in 1605; an eruption of Mt. Etna caused great injuries in 1669; a new earthquake destroyed the beautiful cloister and the church, -- the cloister was abandoned. Yet in 1780, building was again begun, and the succeeding architects destroyed the unity of de Franchis' design, which we reproduce in Fig. 555. Hittorf is very enthusiastic and says in his work mentioned below:--<sup>320</sup> "One cannot help admiring the power of institutions, that create so many marvels," and concerning the stairway drawn by him (Fig. 556), he says:-- "it faithfully represents that magnificent staircase", which may be termed conclusive.

*Note 320. Hittorf and Van Zanth. p. 40, 41.*

### 359. Buildings for Confraternities.

The buildings for the clerical brotherhoods (confraternities) were erected for the care of fellow countrymen in for-





foreign cities, for common benevolent works, or for purposes of devotion. They chiefly appear as "society houses" in a monumental form with frequently the richest treatment of the facades. The programme for the building comprised as a basis a great assembly hall or council hall, wardrobes for apparel and banners, with treasury and waiting rooms, and a connected small chapel, or an altar against the wall in the hall.

These buildings are likewise found as oratories in two stories (Siena), connected with a small or moderately large cloister, among the most charming of which belongs that of the brotherhood dello Scalzo in Florence with the frescos of Andrea del Sarto (Fig. 282), painted in gray on gray.

They increase in Venice to become an enclosed palace, which consists of a great lower hall and an upper hall of equal size with an altar, together with subordinate rooms and a grand staircase. The two finest examples in the city of the lagoons are the Scuola di S. Rocco and the Scuola di S. Marco. Both exhibit magnificent facades with rich sculptures and costly marble veneering; they are built in two stories with a triple system of facade.

S. Marco exhibits one of the most costly marble portals, and with its three semicircular pediments, it is a decorative masterpiece of the first rank, that makes the Place before Ss. Giovanni e Paolo, with the equestrian statue of Colonna and its graduated architecture towards the canal, one of the most interesting architectural creations in the world. Behind the "gay exterior" a "melancholy purpose" is now concealed: the building was erected in 1485 after the designs of Martino Lombardi, and it now serves as a hospital; notable in the interior are the three-aisled columnar hall with a wooden ceiling, the beautifully carved corbels with rich volute consoles above the nobly treated marble columns and then the rich ceiling in the upper story.

*Note 322. Published in Cicognara. p. 109 and Pls. 156-159.*

The grand plan of S. Rocco (Fig. 557) likewise shows in the lower story a hall in three aisles with an altar wall, together with some administrative rooms, and then a beautifully designed stairway in three flights, that leads to the upper



story. Antonio Scarpagnino is mentioned as architect. The grand stairway was built in 1517 and the entrance gateway del Albergo in 1547.

The facade exhibits a horizontal terminal cornice. Its surface is subdivided into three spaces by 4 projecting columns, with broken entablature and cornice, which are decorated by double windows; those of the upper story are enclosed by columns supporting a pediment, whereby an animated play of light and shade is produced on the facade. An overrich piece of magnificence in its way. <sup>323</sup>

*Note 323. Published in Cicognara. p. 199 and plates 190-195.*

As small chapels, which are furnished with rich facades and must at the same time serve as places for assemblies, are to be mentioned the beautiful buildings of the Misericordia in Arezzo <sup>324</sup> and of S. Bernardino at Perugia. (See Fig. 425).

*Note 324. Published in von Geymüller.*





## Books on Architecture of Renaissance in Italy.

## a. General Works.

- Alberti, L. B. *De re edificatoria*. Florence. 1485.
- Alberti, L. B. *L'architettura*. Florence. 1550.
- Alberti, L. B. *L'architecture*. Paris. 1553.
- Palladio, A. *Quattro libri dell'architettura*. Venice. 1570.
- Serlio, S. Bolognese. *L'architettura VII Libri*. Venice. 1584.
- Scamozzi, V. *Dell'idea architettura universale*. In Piazzola VII. 1687.
- Palladio, A. *L'architettura*. Venice. 1711.
- Alberti, L. B. *Della architettura, della pittura e della statua etc.* Bologna. 1782.
- Quatremere de Quincy. *Geschichte der berühmtesten Architekten und ihrer Werke vom XI bis zum Ende des XVIII Jahrhunderts etc.* Darmstadt. 1831.
- Vasari, G. *Leben der ausgezeichnetsten Maler, Bildhauer und Baumeister von Cimabue bis zum Jahre 1567*. Stuttgart und Tübingen. 1832.
- Vasari, G. *Le vite de piu eccellenti pittori, scultori ed architetti*. Florence. 1845-56 and 1878.
- Gailhabaud, J. *L'Architecture du V. au XVII siecle et les arts, qui en dependent*. Paris. -- German edition by L. Londe. Hamburg und Leinizig. 1852.
- Burckhardt, J. *Der Cicerone. Eine Anleitung zum Genuss der Kunstwerke Italiens*. Basle. 1855.
- Nohl, W. *Tagebuch einer Italienische Reise*. Stuttgart. 1866.
- Burckhardt, J. *Geschichte der Renaissance in Italien*. Stuttgart. 1868.
- Förster, H. *Geschichte der Italienischen Kunst*. Leipzig. 1869.
- Burckhardt, J. & W. Lübke. *Geschichte der neueren Baukunst*. 2 d edit. Vol. 1. Stuttgart. 1878.
- Gebhart, H. *Les Origines de la Renaissance en Italie*. Paris. 1879.
- Janitschek, H. *Die Gesellschaft der Renaissance in Italien und die Kunst*. Stuttgart. 1879.
- Holm, A. *Il rinascimento italiano e la Grecia antica*. Paler-



Palermo. 1880.

Symonds, J. A. *Renaissance in Italy*. London. 1880.

Voigt, G. *Die Wiederbelebung des classischen Alterthums etc.*  
2 d. edit. Vol. 2. Berlin. 1881.

Geiger, L. *Renaissance und Humanismus in Italien und Deutschland*. Berlin. 1882.

Müntz, E. *Precurseurs de la Renaissance*. Paris. 1882.

Schütz, A. *Die Renaissance in Italien*. Hamburg. 1882.

Zeller. *L'Italie et la Renaissance*. Paris. 1885.

Lützow, C. v. *Die Kunstschätze Italiens, in geographisch-historischer Uebersicht geschildert*. Stuttgart. 1884.

Burckhardt, J. *Die Cultur der Renaissance in Italien*. 4 th edit. by L. Geiger. Leipzig. 1885.

Müntz, E. *La Renaissance en Italie et en France a l'epoque de Charles VIII*. Paris. 1855.

Thode, H. *Franz von Assisi und der anfänge der Kunst der Renaissance in Italien*. Berlin. 1885.

Redtenbacher, E. *Die Architektur der Italienischen Renaissance etc.* Frankfurt a. M. 1886.

Müntz, E. *Histoire de l'art pendant la Renaissance*. Paris. 1889.

Filarete's, A. A. *Tractat über die Baukunst etc.* Vienna. 1891.

Hauser, A. *Stillehre der architectonischen Formen der Renaissance*. 3 d edit. Vienna. 1891.

Palustre, L. *L'architecture de la Renaissance*. Paris. 1882.

Burckhardt, J. *Der Cicerone. Eine anleitung zum Genuss der Kunstwerke Italiens*. Edited by W. Bode. Leipzig. 1898.

Dohme, R. *Kunst und Künstler Italiens*. Leipzig. 1898.

Choisy, A. *Histoire de l'architecture*. Paris. 1899.

b. *Special Works and Monographs.*

Fontana. *Della transp. dell' Obelisc*. Vatican. Rome. 1590.

Costagutti, G. B. *Architettura della Basilica di San Pietro in Vaticano*. Rome. 1620.

Ferabosco, M. *Libro de l'architettura di San Pietro etc.* Rome. 1620.

Rubens, P. P. *Palazzi di Genova*. Antwerp. 1622.

Rubens, P. P. *Palazzi antichi di Genova etc.* Antwerp. 1663.





- Fontana, C. C. Il tempio Vaticano e sua origine. Rome. 1694.
- Rocca, A. De Tholo Basilicae S. Petri. Rome. 1719.
- Sgrilli, B. S. Descrizione et studiij dell'insigne fabbrica di Sa. Maria del Fiore etc. Florence. 1733.
- 573 Nelli, G. B. Piante ed alzati interiori et esteri dell'insigne chiesa di S. Maria del Fiore, metropolitano fiorentina. Florence. 1735.
- Bibiena, G. G. Architetture e prospettive. Augusta, sotto la direzione di Andrea Pfeffel. 1740.
- Zabaglia, N. Contignationes ac pontes etc. Rome. 1743.
- Poleri, G. Memorie istoriche della gran cupola del Tempio Vaticano etc. Padua. 1748.
- Rossi, G. J. La Libreria Mediceo-Laurenziana etc. Florence. 1755.
- Vanvitelli, L. Dichiarazione dei disegni del Palazzo di Caserta. Naples. 1756.
- Camporesi, P. Loggie di Rafaele nel Vaticano. Rome. 1776.
- Tomassini, G. Il Tempio Malatestiano di Rimini. Foligno. 1794.
- Palladio, A. Le fabbriche e i disegno raccolti et illustr. Vicenza. 1796.
- Grandjean, A. de Montigny & A. Famin. Architecture Toscane etc. Paris. 1806 and 1875.
- Percier, Ch. & P. F. L. Fontaine. Choix des plus celebres maisons de plaisance de Rome et de ses environs. Paris. 1809.
- Ferraboschi. Architettura di San Pietro in Vaticano. Rome. 1812.
- Cicognara, L. Le fabbriche piu cospicue di Venezia. Venice. 1815-20.
- Suys, F. F. & L. P. Handebourt. Palais Massimi a Rome etc. Paris. 1818.
- Pistolesi. Il Vaticano descritto ed illustrato. Rome. 1829-38.
- Gauthier, M. Les plus beaux edifices de la ville de Genes et de ses environs. Paris. 1830.
- Hittorf, J. & L. v. Zanth. Architecture moderne de la Sicile. Paris. 1835.
- Cassina, F. Le fabbriche piu cospicue di Milano. Milan. 1840-1844.
- Opere architettoniche di Raffaello Sanzio misurate ed illustrato dall'Architetto Carlo Pontani. Rome. 1841.



- Gruner, L. Specimens of ornamental art etc. London. 1850.
- Gruner, L. Decorations de palais et d'églises en Italie etc. Paris & London. 1854.
- Gruner, L. Fresco decorations and stuccoes of churches and palaces in Italy. London. 1854.
- Isabelle. Les edifices circulaires et les domes, consideres sous le rapport de leur disposition, de leur construction, et de leur decoration. Paris. 1855.
- Arnold, F. Der herzogliche Palast von Urbino. Leipzig. 1856.
- Funge, L. Beiträge zur Kenntniss der Backsteinarchitektur Italiens. Berlin. 1856.
- Guasti, C. Le cupola di Sta. Maria del Fiore. Florence. 1857.
- Letarouilly, P. Edifices de Rome moderne. Paris. 1860.
- Stegmann, C. Ornamente der Renaissance aus Italien. Weimar. 1861.
- Durelli, G. & F. La Certosa di Pavia, descritta ed illustrata etc. Milan. 1863.
- Isabelle, E. Parallele des salles rondes de l'Italie. Paris. 1863.
- Timler, C. Die Renaissance in Italien. Leipzig. 1865.
- Lasius, G. Die Baukunst in ihrer chronologischen und constructiven Entwicklung dargestellt etc. Darmstadt. 1865-68.
- Gruner, L. The terracotta architecture of North Italy. London. 1867.
- Mylius, C. J. Treppen-, Vestibul- und Hof-Anlagen aus Italien. Leipzig. 1867.
- Geymüller, H. v. Notizen über die Entwürfe zu St. Peter in Rom. Karlsruhe. 1868.
- Peyer im Hof, F. Die Renaissance-Architektur Italiens. Leipzig. 1870.
- Teirich, V. Ornamente der Blüthezeit italienischer Renaissance. Vienna. 1873.
- Redtenbacher, R. Peruzzi und seine Werke. Karlsruhe. 1875.
- Geymüller, H. v. Die ursprüngliche Entwürfe für St. Peter in Rom etc. Vienna. 1876.
- Jovanits, C. A. Forschungen u"ber den Bau der Peterskirche zu Rom. Vienna. 1877.
- Santo Varni. Spigolature artistiche nell' archivio della Basilica di Carignano. Genoa. 1877.





- Paravicini, T. V. Die Renaissance Architektur der Lombardei. Dresden. 1877-78.
- Fonzani, F. & J. Luciolli. Les monuments civils, religieux et militaire de Michel Sanmichele etc. Genoa. 1878.
- Durand-Claye. Etude sur la stabilite de la coupole projetee par Bramante pour la Basilique de Saint Pierre de Rome. Paris. 1879.
- Gmelin, L. Italienisches Skizzenbuch etc. Leipzig. 1879.
- Laspeyres, P. Die Kirchen der Renaissance in Mittel-Italien. Stuttgart. 1881.
- Simil, A. Le Vatican et la basilique de Saint-Pierre de Rome. Paris. 1882.
- Reinhardt, R. Palast-Architektur von Ober-Italien und Toscana vom 15--17 Jahrhundert. Berlin. 1882.
- Semper, H., F. C. Schulze & W. Barth. Carpi, ein Fürstensitz der Renaissance. Dresden. 1882.
- Strack, H. Central- und Kuppelkirchen der Renaissance in Italien. Berlin. 1882.
- Yriarte, On. Un condottiere au XV. siecle etc. Paris. 1882.
- Raschdorff, J. C. Palast-Architektur von Ober-Italien und Toscana vom 13--18 Jahrhundert. Berlin. 1883.
- Geymüller, H. v. Die Architektur der Renaissance in Toscana. Munich. 1885.
- Boffi, L. Palazzo Vitelleschi in Corneto. Milan. 1886.
- Durm, J. Zwei Grossconstruktionen der italienischen Renaissance; (A & B; Florence & Rome). Berlin. 1887.
- Gurlitt, C. Geschichte des Barockstiles, des Rococo und des Klassicismus. Stuttgart. 1887.
- Wölflin, H. Renaissance und Barok. Munich. 1888.
- Oettingen, W. v. Ueber das Leben und die Werke des Antonio Averlino, genannt Filarete. Leipzig. 1888.
- Fabrizzy, C. v. Filippo Brunelleschi. Seine Leben und seine Werke. Stuttgart. 1892.
- Belotti, C. Villa dei Collazzi a Giogoli. Florence. 1893.
- Beltrami, L. La Certosa di Pavia. Milan. 1895.
- Ehrle, F. & E. Stevenson. Gli affreschi del Pentamerico nell' Appartamento Borgia. Rome. 1897.
- Meyer, A. G. Oberitalienische Frührenaissance. Bauten und Werke der Lombardei. Berlin. 1897.



- Poccetti, B. Decken-Malereien des I. Corridors der Uffizi zu Florenz. Berlin. 1897.
- Santo Monti, D. La Cathedrale di Como. Como. 1897.
- Condivi, A. Das Leben Michelangelo's. Munich. 1898.
- Klackze, J. Rome et la renaissance. Paris. 1898.
- Barelli, V. Monumenti Comaschi collezione diretta ed illustrata etc. Como. 1899.
- Malaguzzi Valeri, F. L'architettura a Bologna nel rinascimento. 1899.
- Steinmann, E. Die Sixtinische Kapelle. Munich. 1901.
- Kenz, P. Die Kuppel des Domes Santa Maria del Fiore zu Florenz etc. Berlin. 1901.
- Durm, J. Grossconstructionen der italienischen Renaissance. (C & D; Pistoja & Genoa). Berlin. 1902.
- Ferrerio, P. Palazzi di Roma de piu celebri architetti.
- Gnauth, A. & E. v. Förster. Die Bauwerke der Renaissance in Toscana. Vienna. Lief. I, Pl. 1--VIII.
- Ghiberti, L. Porte principali du baptistere de Florence. Paris.
- D'Esbouv, E. Fragments d'architecture du moyen age et de la Renaissance. Paris.
- Herdtle, H. Mustergiltige Vorlageblätter zum Studium des Flachornaments. Stuttgart.
- Maccari, E. Saggi di architettura e decorazione Italiana. Secolo XVI etc. Rome.
- Maccari, E. Saggi di architettura e decorazione Italiana. Secolo XV, XVI, etc. Rome.
- Maccari, E. Saggi di decorazione Italiana etc. Rome.

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